

The Distribution and Feeding Habits of Lampreys in the Surface Waters of the Gulf Islands and in the Vicinity of the Fraser River, British Columbia

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THE DISTRIBUTION AND FEEDING HABITS OF LAMPREYS
IN THE SURFACE WATERS OF THE GULF ISLANDS
AND IN THE VICINITY OF THE FRASER RIVER,
BRITISH COLUMBIA

by

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ABSTRACT

Beamish, R. J., and J. R. Scarsbrook. 1979. The distribution and feeding habits of lampreys in the surface waters of the Gulf Islands and in the vicinity of the Fraser River, British Columbia. Fish. Mar. Serv. MS Rep. 1512: 24 p.

River lamprey were found throughout the study area from June to September. No river lamprey were found in May or October. A wide range in lengths were observed up to a maximum of 28 cm. The diet of river lamprey consisted of approximately 90% herring and 10% salmon. During July and August the sex ratio of males and females was almost identical, however, the sex ratio for the total sample was approximately 60% female and 40% male. Lamprey scars were observed on 0.079% of the juvenile salmon and 1.92% of the adult salmon examined. Pacific lamprey were not found in association with river lamprey except in the vicinity of the Fraser River.

The report also contains catch data and length frequency measurements for salmon, dogfish, Pacific hake, and pollock.

Key words: River lamprey, stomach contents, Strait of Georgia, herring, salmon.

RÉSUMÉ

Beamish, R. J., and J. R. Scarsbrook. 1979. The distribution and feeding habits of lampreys in the surface waters of the Gulf Islands and in the vicinity of the Fraser River, British Columbia. Fish. Mar. Serv. MS Rep. 1512: 24 p.

On a trouvé des lamproies fluviales d'un bout à l'autre de la région de l'étude de juin à septembre. On n'a pas trouvé de lamproies fluviales en mai et en octobre. Une large variation de longueur était observée jusqu'à un maximum de 28 cm. L'alimentation de la lamproie fluviale se composait d'approximativement de hareng (90%) et de saumon (10%). En juillet et en août la proportion de mâles à femelles était presque la même, mais pour l'expérience totale (de juin à septembre) la proportion était approximativement femelle 60% et mâle 40%. Les cicatrices font par les lamproies fluviales étaient observées sur 0.079% de saumons adolescents et sur 1.92% de saumon murs examinés. Les lamproies pacifiques n'étaient pas trouvées en association avec les lamproies fluviales sauf aux environs du Fraser River.

Le présent rapport comporte aussi les données de prises et les estimations de fréquence par longueur de saumon, d'aiguillats, de merluche pacifique et de collin.

Mots clés: lamproie fluviatile, contenus de l'estomac, détroit de Georgie, hareng, saumon.

INTRODUCTION

In earlier studies (Beamish et al. 1976, Beamish and Williams 1976) it was observed that the river lamprey (*Lampetra ayresii*) commonly was found in the surface waters of the Strait of Georgia. Laboratory studies (Beamish and Williams 1976) showed that during the parasitic phase, river lamprey would actively feed on a variety of fishes including Pacific herring and salmon. Because there are no records of the natural feeding habits of river lamprey a study was undertaken in 1976 to examine the stomach contents of river lamprey in the surface waters of the Strait of Georgia. The study was also designed to identify the timing of the appearance and disappearance of river lamprey in the surface waters. Most of the effort was concentrated in the Gulf Islands area, however, sets were made in other areas to compare feeding habits.

Other species were obtained throughout the study and summaries of the length frequencies and distribution of juvenile salmon, dogfish, and lingcod have been included in this report. Because of the length of these summaries only a few reports have been bound with complete summary tables.

MATERIALS AND METHODS

Surveys were conducted from May to October, 1976 using the CALIGUS, a 17-m steel hulled research vessel equipped with a 203 HP engine. Approximately 40 locations were selected throughout the Gulf Islands area on the basis of the results of a previous survey (Beamish et al. 1976). The most successful sets from this earlier survey were chosen so that maximum catches might be obtained for the amount of effort available throughout the survey area.

In the July survey in the Gulf Islands a day and night series of sets were made to compare abundance and species composition of catches.

As part of a separate study on juvenile salmon, an additional 50 locations in the northern half of the Strait of Georgia were fished from August 29 to September 2 and 26 locations in the southern half of the Strait of Georgia were fished from September 20 to 23. Only lamprey and dogfish data from this separate study have been included in this report. Results from a third study involving purse seine surveys of the Fraser River area are also included in the report.

The seine net used for the survey in each month except September was 275-m long, 26-m deep with mesh sizes ranged from 5 cm to 1 cm (stretched mesh) at the bunt end. A second net used in the September Gulf Island surveys was 400-m long, 33-m deep with mesh sizes ranging from 6.4 cm to 0.6 cm at the bunt end. This net was also used for the survey of the northern and southern portions of the Strait of Georgia.

Conventional purse seine sets were made at each location. The small mesh seine restricted the fishing to calmer weather. For each set, the set conditions and location was noted (Appendices 1-9). Species captured were identified, counted, and measured for fork length except for lamprey and dogfish which were measured for total length. Lamprey were anesthetized in MS 222, measured for total length to the nearest mm and preserved for subsequent stomach analysis. A few lamprey were returned alive for laboratory feeding, growth, and development studies. Other species were measured if time permitted. All fish that were measured were examined for lamprey scars. Specimens of larval fish were preserved and returned to the laboratory for identification. Juvenile salmon for all Gulf Island sets were identified using an identification key developed for these surveys (Beamish et al. 1976). A sample of juvenile salmon from each survey was preserved and examined in the laboratory to confirm identifications. Care in the identification of juvenile salmon was important as previous experience indicated that errors in identification resulted unless firm taxonomic characters were used by field crews.

Lamprey stomach contents were examined in the laboratory by recovering the entire gut contents, measuring the volume, and examining the contents under a microscope. Because river lamprey remove portions of flesh from their hosts (Beamish and Williams 1976) it was often possible to identify the species origin of scale, fin segments, or internal organs such as pyloric caeca. Understandably much of the content could not be identified and results are expressed as frequency of occurrence. If whole scales were present an estimate was made of the age of the prey.

RESULTS AND DISCUSSION

Set locations in the Gulf Islands (Fig. 1) remained constant throughout the study. Set locations outside of the Gulf Island area were fished on only one occasion (Fig. 2). Scientific and common names of fishes captured during the study are included in Appendix 1. Species composition of the catches and numbers captured have been listed by cruises in Appendix 2-10. Appendix 10 lists separately the catches made in the vicinity of Fraser River on August 9, September 7. The catches of river lamprey, dogfish, pollock, hake, chum, sockeye, pink, coho, and chinook salmon by area and time of year have been summarized in Fig. 3-48 for each cruise.

A total of 324 sets were completed in the Strait of Georgia and Gulf Islands area during the periods May 11 to October 25, 1976. These included, 236 in the Gulf Islands, 50 in the northern Strait, 26 in the southern Strait, and 18 in the Fraser River area. A total of 25 species were captured at some time throughout the survey (Appendix 2-10). Of the sets made in the Gulf Islands, juvenile herring were the most numerous. Salmon were second in abundance with catches of ~28,300 pink salmon, ~5,800 chum salmon, 1,161 coho salmon, 587 sockeye salmon, and 527 chinook salmon. A total of 587 dogfish were caught in the 236 sets. Other species caught in the Gulf Islands and other surveys are listed in Appendices 2-10 and Fig. 3-48.

RIVER LAMPREY

In the Gulf Islands study a total of 125 river lamprey were captured in 236 sets. Catches were smaller than in previous years (Beamish and Williams 1976) however the seine used for this study fished 7.3 m shallower and was considerably shorter than the seine used in previous years (area fished was 0.6 hectares vs. 1.3 hectares for the larger net). In both nets used, lamprey were observed to escape through the larger mesh before the seine could be "pursed" up to confine them in the smaller mesh bunt. Thus a direct comparison of catch per unit effort can not be made between this study and previous studies.

No river lamprey were found in May or October thus the period June to September appears to be the approximate length of residence in the surface waters. It is not known where the river lamprey go when they leave the surface waters however, the disappearance from the surface waters coincided with the time that ova size increased in lamprey held in the laboratory and examined from field studies (Beamish and Williams 1976). Therefore it appears that the disappearance from the surface waters is related to the onset of maturity, however at present no river lamprey have been observed entering rivers in the fall.

The survey of the whole Strait of Georgia indicated that river lamprey were distributed throughout the Strait and possibly more numerous on the north east side of the Strait (Fig. 32). This distribution was similar to that observed in previous years except for increased catches in 1976 in the Pender Harbour area, Jervis Inlet and Powell River locations. The apparent predominance on the northeast side may indicate larger concentrations resulting from larger rivers rather than an actual preference for this area.

River lamprey ranged in length from 9 cm early in the study to 28 cm later in the study (Fig. 49, Appendices 2-9). The range of sizes observed was similar to the range observed in previous studies for similar times of the year (Beamish and Williams 1976). The length frequency distributions for the Gulf Islands sample in July and the Southern Strait sample indicate a wide range of lengths were present. While this range in sizes possibly results from intermixing of lamprey from different rivers in the total catch it also must reflect the size at which river lamprey enter salt water. Unpublished summaries of lengths of river lamprey migrating out of the Fraser River into the Strait of Georgia in June 1978 indicate the range in total length is from 4-15 cm. There also is a difference in the timing of the migration of river lamprey into salt water. Transformed river lamprey have been captured moving downstream as early as March in one Vancouver Island stream (Beamish unpublished data). Therefore the range of observed lengths may be the result of growth within the freshwater stream, the timing of migration as well as growth in salt water. It was interesting that six of the seven frequency distributions in Fig. 49 terminate at a maximum length of 28 cm.

Catches during the day (20 sets) (Fig. 16, 24, 34) averaged 2.0 and were significantly higher than the average 0.7 for 17 corresponding night sets (Wilcoxon-Mann-Whitney test $p < 0.05$, Snedecor and Cochran 1967).

The sex of all river lamprey was determined when contents of the stomach were examined (Table 1-5). Sex was determined by macroscopic examination and only in the June sample was there some uncertainty concerning the identifications. The sex ratio for the total sample was 60% female and 40% male. During the July and August period the ratio of males to females was almost identical while females represented 66% of the catch in September. During July and August a total of 9 males and 2 females were found in the night sets, however, the sample size was too small to compare behaviour of males and females from day and night catches.

The contents of lamprey stomachs were identified to species wherever possible. Only a portion of the stomach contents could be identified as belonging to a particular species but because no stomachs were observed to contain more than one species all contents in any one stomach were concluded to be from one species. Of the 182 stomachs examined, 38 (21.8%) were empty and 9 (4.9%) contained unidentifiable remains. The most frequently occurring species was herring occurring in 115 (62.8%) of the 182 stomachs examined (Table 6). In June herring and salmon occurred in stomachs in about equal frequency, however, herring rapidly became the principal food item. Salmon remains were the second most abundant food item, occurring in 18 (9.8%) of the stomachs examined. There was a decrease in the percent occurrence of salmon remains from June through September that may relate to the movement of young salmon out of the Strait but also may relate to the movement of river lamprey into schools of herring. River lamprey have been observed to remain in herring schools and feed on herring, salmon, and anchovy that are part of these schools. The only other species identified from the stomach remains was anchovy, occurring in 3 (1.6%) and the shiner perch in 1 (0.5%) of the stomachs. The mean stomach volume was highest in August and averaged 0.78 cc (Table 6).

River lamprey feed by removing pieces of tissue thus portions of the gut and internal organs were frequently observed in the stomach remains. When such items were found it was likely that the host did not survive the attack.

PACIFIC LAMPREY

No Pacific lamprey were captured in the Gulf Islands survey. All (25) Pacific lamprey were captured in the vicinity of the Fraser River on September 7 (9) and September 21 (16) (Fig. 32). Pacific lamprey that were captured were similar in length to river lamprey. The failure to find Pacific lamprey in the surface waters in other areas is consistent with observations from earlier studies (Beamish and Williams 1976, Beamish, unpublished data) that indicate that Pacific lamprey often are found at deeper depths than river lamprey.

OCCURRENCE OF LAMPREY SCARS

All fish sampled were examined for the presence of lamprey scars. All scarred fish (63) were salmon. Identification of the possible predator was conducted at sea without the aid of a microscope and unless the identification

Table 1 . Length, sex, stomach volume and stomach contents of river lamprey (Lampetra ayresii), June 21-26, 1976.

Sex	Length (cm)	Stomach volume (cc)	Stomach contents
♀?	17.2	0.7	?-m,g,f
♀?	15.9	0.9	salmon?-m,g,f
♂?	17.9	1.5	salmon?-m,s,sc,b
♀	15.6	0.7	salmon?-m,f,sc
♂?	16.4	1.8	salmon?-m,s,sc,f,bl
	9.0	0.5	salmon?-m,s,sc,bl
	12.2	0.01	perch?-sc
♀	11.1	0.6	herring-y of y-m,sc
♂?	13.0	0.5	herring-y of y-m,sc,f
♂?	13.0	0.5	salmon?-m,sc
♀?	12.7	0.8	herring-m,g
♀	9.4	0.4	?-m,bl
♂?	10.9	0.5	herring-y of y-m,f
	14.7	1.0	salmon?-m,s,sc
♀	12.6	0.3	salmon?-m,sc,bl
♂?	12.0	0.4	?-bl
♀	11.9	0.5	?-m,bl
♀	11.2	0.1	herring-y of y-m,f
♀	11.0		empty
♀	15.5	1.0	herring-y of y-m,f,sc
♀	17.6	2.5	herring-y of y-m,f,bl

m - muscle

s - skin

g - gut

b - bones

f - fins

sc - scales

bl - blood

y of y - age 1

Table 2. Length, sex, stomach volume and stomach contents of river lamprey (*Lampetra ayersii*), collected July 5-9, 1978.

Sex	Length (cm)	Stomach volume (cc)	Stomach contents
Day sets:			
♂	14.7	0.7	salmon-m,sc
♀	13.3	0.6	herring-m,sc,s
♀	19.9	1.8	herring-m,sc,s,f,g
♀	17.4	1.2	herring-m,sc,g
♀	19.5	1.6	herring-m,sc,f
♀	16.3	0.001	salmon-m,sc
♀	14.3	0.6	?-m
♂	17.1	0.6	salmon-m,sc,s
♀	20.9	0.8	salmon-m,sc,s
♀	17.3	0.01	herring-sc,s
♂	15.1	1.1	herring-m,sc,f
♂	12.5	0.02	herring-m,sc
♂	12.1	0.5	herring-m,sc,b
♂	11.9	0.4	herring-m,sc,f
♂	11.6	0.2	herring-m,s
♀	20.7	0.7	salmon-m,sc,f
♀	16.4	0.5	herring-m,sc,b,g,bl
♀	15.4	0.6	herring-m,sc,f
♀	15.7	1.4	herring-m,f
♂	13.9	0.8	herring-m,sc,s,g
♀	25.4	3.2	herring-m,sc,s
♀	18.0	0.8	herring-m,sc,s,f,g
♂	13.5	0.9	herring-m,sc,f,bl
♀	19.0	0.9	herring-m,sc,g
♀	17.7	0.2	herring-m,f
♂	14.2	0.6	salmon-m,sc
♀	20.5	1.3	herring-m,sc,s,g
♂	23.0	2.5	?-m
♂	22.9	1.8	herring-m,sc,s
♂	15.5	1.7	herring-m,sc,s,f,g
♀	14.5	0.7	herring-m,sc,f
♀	13.1	0.5	herring-m,sc,f,g
♂	12.9	0.7	herring-m,sc,f,g
♂	12.5	0.2	herring-m,sc,f,bl
♀	12.0	0.6	herring-m,sc
♂	15.6	0.05	herring-m,sc,f
Night sets:			
♀	20.9	3.0	herring-m,sc,f,g
♂	19.0		empty
♂	14.1	1.3	herring-m,sc,g
♀	27.4	4.5	herring-m,sc
♂	19.9	1.2	herring-m,sc,f
♀	13.1	0.3	herring-m,s
♂	15.1	1.2	herring-m,sc,s
♂	15.1	0.7	?-m,g
♂	13.6	0.2	herring-m,sc
♂	16.0	0.8	herring-m,sc,f,g

Table 3. Length, sex, stomach volume and stomach contents of river lamprey (*Lampetra ayersii*), collected August 3-10, 1976.

Sex	Length (cm)	Stomach volume (cc)	Stomach contents
Day sets:			
♂	22.1	0.7	herring-m,sc,g
♂	25.6	3.8	salmon-m,f,g
♂	24.5		empty
♂	23.7		empty
♂	19.7		empty
♂	27.8	0.5	herring-m,sc,f,g
♂	24.0		empty
♂	21.1	0.6	herring-m,sc,s
♂	20.9	0.3	herring-m,sc
♂	25.2	0.2	herring-m,sc
♂	24.9	0.2	herring-m,sc,g
♂	24.0	0.3	herring-m,sc
♂	21.6	1.1	anchovy-m,sc,f,g
♂	21.0		empty
♂	26.1	0.4	herring-m,sc,s,g
♂	25.9	1.7	anchovy-m,sc,s,g
♂	25.1	3.0	herring, m,sc,s
♂	23.0	2.7	herring-m,sc,f
♂	22.8	0.9	herring-m,sc,b
♂	25.4	2.5	herring-m,sc,f,g
♂	23.7	2.2	herring-m,sc,f,g,bl
♂	27.4	2.1	herring-m,sc,f,g
♂	24.6	2.5	*herring-m,sc,f,g
♂	24.4	1.0	herring-m,sc,f,s
♂	21.3	2.2	herring-m,sc,f,s
♂	23.5	1.6	herring-m,sc,f,s,b
♂	20.4	1.4	herring-m,sc
♂	22.2	1.7	*herring-m,sc,f,s,b,g
♂	19.9	1.4	herring-m,sc,f,s,b
♂	20.8	1.5	herring-m,sc,s,g,bl
♂	22.1	1.5	herring-m,sc,s,g
♂	19.0	1.8	herring-m,sc,s,g,f
♂	20.0	0.8	herring-m,sc,g
♂	23.2	0.4	herring-m,sc,g,f
♂	21.9	0.8	herring-sc,s,g,f
♂	22.5	1.2	salmon-m,sc,s,b
♂	24.5	1.3	herring-m,sc,f,g,b
Night sets:			
♂	23.0	1.8	*herring-m,sc,s,f
♂	20.5		empty

*Two different specimens present.

-Set #158 not analysed.

Table 4. Length, sex, stomach volume and stomach contents of river lamprey (Lampetra ayersii), collected Aug. 24- Sept. 2, 1976.

Sex	Length (cm)	Stomach volume (cc)	Stomach contents
♂	23.5		empty
♀	19.6	0.4	herring-m,sc,s,g
♀	23.3		empty
♀	21.2	0.01	anchovy-m,s,b
♀	21.1		empty
♀	20.9	0.6	herring-m,sc,b,g
♀	19.0	0.6	herring-m,sc,s,f,g
♀	24.9	0.5	herring-m,sc,s,f,g
♀	26.6		empty
♀	22.4	0.2	herring-m,sc,f,g
♀	20.9		empty
♀	23.5 ^a		empty
♀	20.9		empty
♀	23.4	0.6	herring-m,sc,f,g
♀	23.2	0.8	herring-m,sc,f,g
♀	22.4	0.7	herring-m,sc,f,g
♀	22.8	1.4	herring-m,sc,f,g
♀	23.1		empty
♀	21.5	0.05	herring-m,sc,f
♀	21.2		empty
♀	20.6	0.7	herring-m,sc,f,g
♀	20.5	0.3	herring-m,sc
♀	20.3		empty
♀	19.5	1.0	herring?-m,g,
♀	25.2		empty
♀	24.9		empty
♀	23.3	0.3	?-m,bl
♀	22.8	1.1	herring-m,sc,g
♀	22.7		empty
♀	22.0	0.9	herring-m,sc,g
♀	25.2	0.4	herring-m,sc,f,g
♀	25.3		empty
♀	21.2	1.2	herring-m,sc,f,g
♀	20.8		empty
♀	21.1		empty
♀	20.4	0.5	herring-m,sc,f,g
♀	20.6	0.9	herring-m,sc,f,g
♀	19.3	0.7	herring-m,sc,f,g
♀	21.4	1.3	herring-m,sc,f,s,b
♀	22.5	1.3	herring-m,sc,f,g
♀	28.1		empty
♀	22.2		empty
♀	22.2		empty
♀	25.6		empty
♀	23.5		empty

Table 4. (Cont'd)

Sex	Length (cm)	Stomach volume (cc)	Stomach contents
♀	22.0	0.7	herring-m,sc,f,g
♀	21.3	0.8	herring-m,sc,f,g
♀	20.7		empty
♀	20.3		empty
♀	23.0	1.6	herring-m,sc,f,g,s
♀	20.8		empty
♀	20.2	1.0	herring-m,sc,f,g,s
♀	25.9	0.7	herring-m,sc,f,g
♀	21.8	1.2	herring-m,sc,s,g
♀	23.5		empty
♀	22.6	0.8	herring-m,sc,f,g
♀	25.4	0.4	herring-m,sc,bl
♀	24.2	1.1	salmon-sc
			herring-m,sc,s,g
♀	22.1	1.0	herring-m,sc,f,g

*Tail missing.

Table 5. Length, sex, stomach volume and stomach contents of river lamprey (Lampetra ayersii), collected September 8-15, 1976.

Sex	Length (cm)	Stomach volume (cc)	Stomach contents
♀	24.5	3.4	herring-m,sc,s,f,g
♀	27.2	0.3	herring-m,f,
♀	27.2		empty
♀	25.7	1.3	herring-m,sc,s,f,g
♀	26.0	0.5	herring-m,sc,g
♀	24.2		empty
♀	23.8	0.2	herring-m,sc,b
♀	25.9		empty
♀	24.2	1.5	herring-m,sc,f,g
♀	24.4	0.4	herring-m,sc,f
♀	26.2		empty
♀	28.4	0.8	herring-m,sc,g
♀	25.6	1.0	salmon-m,sc,g,s
♀	22.7	1.2	herring-m,sc,f,g
♀	24.3		empty
♀	22.7	0.4	herring-m,sc,f,g
♀	23.7	0.8	herring-m,sc,f,g

Table 6. Summary of stomach content analysis.

Cruise dates	n	Mean length (cm)	Mean stomach volume ^a (cc)	Volume range (cc)	Stomach contents - frequency of occurrence							
					Herring		Salmon		Anchovy		Unidentified	
					n	%	n	%	n	%	n	%
June 21-26	22	13.35	21 ^b 0.72	0.0-2.5	7	33.3	8	38.1			5	23.8
July 5-9	46	16.53	46 0.96	0.0-4.5	36	78.3	6	13.0			3	6.5
Aug. 3-10	40	23.09	39 ^c 1.18	0.0-3.8	29	74.4	2	5.1	2	5.1		
Aug. 24-Sep. 2	59	22.07	59 ^d 0.44	0.0-0.6	32	54.2	1	1.7	1	1.7	1	1.7
Sep. 8-15	17	25.10	17 0.69	0.0-3.4	11	64.7	1	5.9				
Total	184		182 0.78	0.0-4.5	115	62.8	18	9.8	3	1.6	9	4.9
											38	21.8

^aIncludes empty stomachs.^bSet #65 not processed.^cSet #158 not processed.^dSpecimen from Set 49 with 2 fish in stomach.

of the tooth pattern was obvious no identification was assigned. Scars were found on 0.07% (26 of a total 34,671 fish) of the juvenile salmon and 1.92% (37 of total 1,930 fish) of the adult salmon (Table 7, 8, 9). The lower incidence of scarring of juveniles may indicate a lower survival rate of juvenile salmon. In all cases lamprey were caught in association with lamprey scarred fish. Lamprey scars tended to be located dorsally (Table 9). The tendency to attack dorsally appears to be characteristic of river lamprey. Attacks to the mid-anterior and ventral region appear to be characteristic of Pacific lamprey (Beamish, unpublished data) and the two scars identified as Pacific lamprey scars were found in this region. Numerous healed scars and partially healed scars were observed suggesting that not all lamprey attacks are fatal (Table 9). Since no Pacific lamprey were captured outside of the immediate vicinity of the Fraser River, it is probable that scars found on salmon in the Gulf Islands area resulted from river lamprey attacks. Scars observed on fish in the vicinity of the Fraser River appeared to result both from Pacific lamprey and river lamprey attacks. Adult sockeye salmon frequently were observed to have a higher incidence of scarring (Table 7, 8).

DOGFISH

Dogfish were found throughout the survey area (Table 10). Length and sex were obtained from 1,180 dogfish (Appendix 2-10) and 750 of these were examined for stomach contents. Of the 245 sets made in the Gulf Islands the average catch of all dogfish was 3.8 per set compared to 10.4 per set for the 76 sets in the open strait. Juvenile dogfish (< 60 cm) were common but were more abundant in the open strait than in the Gulf Islands.

Stomach contents were examined from only a few of the dogfish in the catches (Table 11) and only the primary food item from each stomach has been identified in Table 12 and 13. A large number of the stomachs were observed to be empty. Since dogfish were obtained by purse seining the absence of food probably is not the result of regurgitation caused by stress during capture. Plankton was a prominent food item of those fish that contained material in their stomachs, especially for fish smaller than 60 cm.

SALMON

All five species of salmon were captured during the survey. Individual catches by set are included in Appendices 2-9 and Fig. 4, 5, 6, 7, 8, 11, 12, 13, 14, 15, 19, 20, 21, 22, 23, 28, 29, 30, 31, 39, 40, 41, 46, 47, 48. Young sockeye were not found after July and no pink salmon were captured in October. Young sockeye were most abundant in June (Fig. 5, 12, 20, 28, 38). Few pink salmon were found in May (Fig. 5). No adult sockeye or pink salmon were found during the survey in the Gulf Islands (Appendices 2-10). Chum salmon were most abundant in the Gulf Islands during June and July (Fig. 6, 13, 21, 29, 46). Most chum salmon ranged in length from 10-20 cm except in October when 12 adults ranging from 70-81 cm were captured (Appendices 2-10). Coho were less numerous than the previous species, with the greatest abundance occurring in

Table 7. Occurrence of lamprey scars.

	May 11-21	June 21-26	July 5-9	Aug. 3-10 24-Sep.2	Sept. 6 sets	Sept.7 8-15	Sept. 21-26
Chum		3	4	1		2	
Coho			3	1			1 ^b
Chinook			1	3			1 ^a
Pink			1			10	
Sockeye	1	3	3	1	5	1	14 ^b
Steelhead				1			
Total	1 ^a	6 ^a	12 ^a	7 ^a	5 ^b	13 ^a	16

^aJuveniles (arbitrarily set at length less than 22 cm).

^bAdults (arbitrarily set at length greater than 22 cm; smallest fish occurring in adult category was 52 cm in length).

Table 8. Number scars observed and number of fish examined.

	May	June	July	Aug.	Sept.
	Juveniles				Adults
Chum	0;163	3;3506	4;1907	1;142	2;78
Coho	0;353	0;53	3;160	1;244	1;362
Chinook	0;94	0;66	1;56	3;105	4;239
Pink	0;62	0;26421	1;199	0;555	10;1098
Sockeye	1;250	3;292	3;38	1;2	20;153
Steelhead	0;2	0;0	0;0	1;1	0;0

Table 9. Summary of lamprey scar information, May-September 1976.

Set	Date	Species	Length (cm)	Description of lamprey mark
24	May/76	sockeye	11.0	1 dorsal
43	June/76	chum	8.5	not described
51	June/76	sockeye	10.0	1 fresh, behind dorsal, 2 mm deep
51	June/76	sockeye	12.0	1 healed, behind dorsal
71	June/76	sockeye	10.0	not described
80	June/76	chum(2)	10.9	1 - right dorsal ant. 1 - right dorsal post.
84	July/76	coho	20.0	1 fairly fresh, on top between head & dorsal
88	July/76	chum	11.0	very fresh, 1 on right side very fresh, 1 - mid-dorsal
88	July/76	chum	11.0	1 - ant. dorsal
88	July/76	chum	12.0	1 - ant. to dorsal fin
88	July/76	coho	18.5	1 - ant. dorsal
91	July/76	chinook	17.0	1 - Post. dorsal
97	July/76	sockeye	11.5	1 healed, ant. to dorsal
97	July/76	sockeye	11.0	1 healed, left of dorsal
97	July/76	coho	15.5	1 fairly fresh, right of dorsal fin
99	July/76	pink	10.0	1 fresh mark ant. to dorsal fin
99	July/76	chum	12.5	1 healed, center dorsal
101	July/76	sockeye	10.5	1 healing, mid-dorsal
150	Aug./76	chinook	11.0	1 healed, mid-lateral
153	Aug./76	steelhead	22.0	2 fresh: 1 right mid-lateral 1 ant. dorsal (Point Grey area)
154	Aug./76	chum	14.0	1 fresh, ant. dorsal (Point Grey area)
156	Aug./76	chinook	11.0	1 fresh, post. lateral (Point Grey Area)
158	Aug./76	coho	-	1 fresh, right mid-dorsal
38	Aug./76	chinook	12.3	1 fresh, left mid-dorsal
50	Aug./76	sockeye	15.3	1 fresh, post. ventral
6 sets	Sept./76	sockeye(5)	60.0	1 fresh, mid-ventral, large possibly Pacific lamprey

Table 9. (Cont'd)

Set	Date	Species	Length (cm)	Description of lamprey mark
6 sets	Sept./76	sockeye	62.0	1 fresh, left ant. lateral
6 sets	Sept./76	sockeye	62.0	1 healed, left ant. lateral
6 sets	Sept./76	sockeye	55.0	1 fresh, ant. ventral
6 sets	Sept./76	sockeye	-	1 fresh, ant. ventral & 1 post. ventral & 1 left mid-lateral
162	Sept./76	pink	15.0	1 fresh, right mid-dorsal
164	Sept./76	pink	14.0	1 healed, left ant. dorsal
172	Sept./76	sockeye	16.0	1 fresh, mid-dorsal
180	Sept./76	chum	14.0	1 no puncture, mid-dorsal
180	Sept./76	chum	18.0	1 healing, mid-dorsal
180	Sept./76	pink	16.0	1 fresh, ant. dorsal
180	Sept./76	pink	16.0	1 fresh, mid-dorsal
182	Sept./76	pink	13.0	1 fresh, ant. dorsal-lateral
183	Sept./76	pink	16.0	1 fresh, left mid-dorsal
183	Sept./76	pink	17.0	1 fresh, left mid-lateral
183	Sept./76	pink	17.0	1 left, mid-lateral
184	Sept./76	pink	16.0	1 healed or partial attack, mid-lateral
188	Sept./76	pink	15.0	1 post. lateral
10	Sept./76	chinook	14.0	1 fresh, right mid-lateral
14	Sept./76	sockeye	65.0Q	2 fresh, ant. ventral
14	Sept./76	sockeye	65.0Q	1 fresh, mid-lateral, Pacific lamprey
14	Sept./76	sockeye	61.0Q	1 fresh, mid-ventral large
14	Sept./76	sockeye	68.0Q	1 healed, left ventral
14	Sept./76	sockeye	64.0Q	1 fresh, mid-ventral large
14	Sept./76	sockeye	62.0Q	3 fresh, mid-ventral large
14	Sept./76	sockeye	61.0Q	1 right mid-lateral
14	Sept./76	sockeye	65.0Q	2 fresh, mid-ventral
14	Sept./76	sockeye	47.0Q	1 fresh, post. lateral
14	Sept./76	sockeye	59.0Q	1 fresh, ant. ventral, 1 mid-ventral
14	Sept./76	sockeye	67.0Q	3 fresh, ant. ventral
14	Sept./76	sockeye	54.0Q	1 fresh, ant. lateral
14	Sept./76	sockeye	52.0Q	1 healed, left mid-lateral
14	Sept./76	sockeye	59.0Q	1 fresh, mid-lateral; 1 fresh, mid-ventral
14	Sept./76	coho	56.0Q	1 fresh, ant. ventral

Table 10. Summary of dogfish catches.

Cruise dates	Total sets	Total sets with dogfish	Number	Total		Total examined for			Location
				≤60cm	>60cm	Length	Sex	Stomach	
May 11-21	40	11	~635 ^a	69	26	96	96	--b	Gulf Islands
June 21-26	40	13	58	10	48	58	58	15	Gulf Islands
July 5-9	27	8	39	0	39	39	39	23	Gulf Islands
Aug. 3-8, 10	46	7	36	25	11	36	36	--	Gulf Islands
Aug. 24-Sep. 2	50	26	585	460	38	527	527	112	N. St. Georgia
Sep. 8-15	40	7	158	96	44	154	154	--	Gulf Islands
Sep. 20-23	26	11	211	209	2	211	211	--	S. St. Georgia
Oct. 14-25	43	7	10	2	7	9	9	--	Gulf Islands
Aug. 9	6	5	54	50	0	50	50	--	Fraser River
Sep. 7	6	7	~12	--	--	--	--	--	N. Arm Fraser Jetty
Total	324	95+	~1798			1180	1180	150	

^aIncludes one haul of an estimated 500 dogfish.^bA dash (--) indicates no data collected.

Table 11. Summary of dogfish examined for stomach contents.

	June 21-26 Gulf Islands	July 5-9 Gulf Islands	Aug. 24-Sep. 2 N. St. Georgia
Total examined ≤ 60 cm	0	0	77
Number empty			25
Number with contents			52
Total examined > 60 cm	15	23	34
Number empty	5	12	27
Number with contents	10	11	21

Table 12. Incidence of primary food items in the stomach of dogfish >60cm.

Food item	June 21-26 Gulf Islands	July 5-9 Gulf Islands	Aug. 24-Sep. 2 N. St. Georgia
Empty	5	12	27
Unidentified fish		3	2
Herring	2	2	
Ctenophores	2	4	
Plankton	1	1	
Octopus	1		1
Unidentified material	4		1
Squid	1		
Polychaete		1	
Pipefish			
Crab			1
Pacific hake			3

Table 13. Incidence of primary food items in the stomach of dogfish ≤ 60 cm.

Food items	June 21-26 Gulf Islands	July 5-9 Gulf Islands	Aug. 24-Sep. 2 N. St. Georgia
Empty			25
Unidentified fish			6
Herring			
Ctenophores			10
Plankton			17
Octopus			
Unidentified material			22
Squid			
Polychaete			
Pipefish			2
Pacific hake			
Amphipod			1

August (Fig. 7, 14, 22, 30, 40, 47). Most coho ranged in length from 10-30 cm (Appendices 2-10). Chinook salmon also were not abundant relative to sockeye, pink, and chum salmon (Fig. 8, 15, 23, 31, 41, 48). Total catches of chinook were similar throughout the study period with no area providing the large catches that were obtained for some of the other species. All chinook captured in May ranged in length from 22-56 cm (Appendices 2-10). The number of chinook larger than 20 cm decreased after May with most fish in the 10-30 cm range. For a detailed discussion of the distribution, abundance, and feeding habits of juvenile Pacific salmon found in this and other studies see Healey 1978.

OTHER SPECIES

Pollock, Pacific hake, lingcod, herring, and the threespine stickleback were sampled during the study. Pollock and Pacific hake were captured in the Gulf Islands area during the night sets made in July, August, September, and October (Fig. 18, 27, 36, 37, 43, 44). With the exception of two sets in August and one in September in Saanich Inlet, all pollock were caught in the Ladysmith-Kulleet Bay area. Pollock averaged 7.1 cm in August and 10.4 cm in October (Appendices 2-9). Pacific hake were also caught in every night set in the Ladysmith-Kulleet Bay area. Hake ranged in length from an average of 30.5 cm in July to 38.6 cm in October. The information collected in hake and pollock in this study was analyzed as part of another study of juvenile fish in this area and additional discussion and results can be found in Beamish et al. 1979.

Juvenile lingcod were obtained in the May survey (Appendix 2) and ranged in length from 3-7 cm. These fish were young-of-the-year that are resident in the surface waters immediately after hatching (Phillips and Barraclough 1977; Low and Beamish 1978). One 13 cm lingcod was captured and since an attempt to determine the age of this fish was not made it was not known if it was a fast growing young-of-the-year or a slow growing age 1 fish. The early life history of lingcod from the area and period of this study has been discussed by Phillips and Barraclough 1977.

Samples of herring were measured in May and June (Appendix 2 and 3) and a sample of threespine sticklebacks was measured in May (Appendix 2).

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Appendix 1, Table 1. Scientific and common names of fishes captured during survey.

Common name	Scientific name
River lamprey	<u>Lampetra ayresi</u>
Pacific lamprey	<u>Lampetra tridentatus</u>
Chum salmon	<u>Oncorhynchus keta</u>
Chinook salmon	<u>Oncorhynchus tshawytscha</u>
Coho salmon	<u>Oncorhynchus kisutch</u>
Pink salmon	<u>Oncorhynchus gorbuscha</u>
Sockeye salmon	<u>Oncorhynchus nerka</u>
Spiny dogfish	<u>Squalus acanthias</u>
Pacific herring	<u>Clupea harengus pallasii</u>
Pacific hake	<u>Merluccius productus</u>
Walleye pollock	<u>Theragra chalcogramma</u>
Lingcod	<u>Ophiodon elongatus</u>
Plainfin midshipmen	<u>Porichthys notatus</u>
Threespine stickleback	<u>Gasterosteus aculeatus</u>
Northern anchovy	<u>Engraulis mordax mordax</u>
Pacific sand lance	<u>Ammodytes hexapterus</u>
Starry flounder	<u>Platichthys stellatus</u>
Pile perch	<u>Rhacochilus vacca</u>
Shiner perch	<u>Cymatogaster aggregata</u>
Eulachon	<u>Thaleichthys pacificus</u>
Saddleback gunnel	<u>Pholis ornata</u>
Pacific cod	<u>Gadus macrocephalus</u>
Steelhead	<u>Salmo gairdneri</u>
Capelin	<u>Mallotus villosus</u>
Bay pipefish	<u>Syngnathus griseolineatus</u>

Appendix 1, Table 2. Set information, May 11-21, 1976.

Set no.	1	2	3	4	5
Station no.	1	5	6	9	8
Date	May 11, 1976	May 11, 1976	May 11, 1976	May 11, 1976	May 12, 1976
Location	Departure Bay	Boat Harbour	Center Channel	Ruxton Island	DeCoursey Is.
Time (PDT)	09:15	14:30	15:15	17:00	08:12
Bottom depth (m)		47.5	47.5	47.5	64.0
Tide	Ebbing	Flooding	Flooding	Flooding	Slack
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks	Standard set	Standard set	Ripped net - water haul	Standard set	Standard set - water haul

Appendix 1, Table 2 (cont'd)

Set no.	6	7	8	9	10
Station no.	7	12	13	10	14
Date	May 12, 1976	May 14, 1976	May 14, 1976	May 17, 1976	May 17, 1976
Location	Valdes Shore	Blackberry Point	North Forlier Pass	Kullest Bay	Ladysmith Harbour
Time (PDT)	08:47	10:00	11:07	15:05	16:15
Bottom depth (m)	58.5	49.4	40.2	45.0	29.0
Tide	Slack	Ebbing	Ebbing	Flooding	Flooding
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks		Standard set	Standard set	Standard set	Standard set

Appendix 1, Table 2 (cont'd)

Set no.	11	12	13	14	15
Station no.	15	16	18	21	20
Date	May 17, 1976	May 17, 1976	May 17, 1976	May 18, 1976	May 18, 1976
Location	Center Stuart Channel	Alarm Rock	Tent Island	Crofton	Willy Island
Time (PDT)	17:15	19:35	20:30	07:20	08:40
Bottom depth (m)	80.0	55.0	134.0	54.0	99.0
Tide	Flooding	High Slack	Ebbing	Flooding	Ebbing
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks	Standard set	Standard set	Standard set	Standard set	Standard set

Appendix 1, Table 2 (cont'd)

Set no.	16	17	18	19	20
Station no.	22	23	19	17	24
Date	May 18, 1976	May 18, 1976	May 18, 1976	May 18, 1976	May 18, 1976
Location	Center Stuart Channel	Booth Bay	Tent Island	Secretary Island	Walker Rock
Time (PDT)	09:35	11:05	12:00	13:15	14:00
Bottom depth (m)	210.0	26.0		30.0	
Tide	Ebbing	Ebbing	Ebbing	Ebbing	Ebbing
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks	Standard set	Standard set	Standard set	Standard set	Standard set

Appendix 1, Table 2 (cont'd)

Set no.	21	22	23	24	25
Station no.	25	29	30	28	31
Date	May 18, 1976	May 18, 1976	May 18, 1976	May 19, 1976	May 19, 1976
Location	Parker Island	Active Pass	Channel Is. Captain's Pass	Captain's Pass	Prevost Island
Time (PDT)	15:10	16:30	17:30	07:40	08:30
Bottom depth (m)	55.0	58.0	33.0	72.0	40.0
Tide	Flooding	Flooding	Flooding	Flooding	Ebbing
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks	Standard set	Standard set	Standard set	Standard set	Standard set

Appendix 1, Table 2 (cont'd)

Sét no.	26	27	28	29	30
Station no.	37	36	35	38	33
Date	May 19, 1976	May 19, 1976	May 19, 1976	May 19, 1976	May 19, 1976
Location	Swanson Channel	Fulford Harbour	Saanich Inlet	McCurdy Point	Separation Point
Time (PDT)	09:30	10:40	11:50	13:15	15:10
Bottom depth (m)	81.0	63.0	63.0	53.0	54.0
Tide	Ebbing	Ebbing	Ebbing	Flooding	Flooding
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks	Standard set	Standard set	Standard set	Standard set	Standard set

Appendix 1, Table 2 (cont'd)

Set no.	31	32	33	34	35
Station no.	27	26	34	39	32
Date	May 19, 1976	May 19, 1976	May 20, 1976	May 20, 1976	May 20, 1976
Location	Burgoyne Bay	Maple Bay	Hatch Point	Mill Bay	Cowichan Bay
Time (PDT)	16:10	17:05	07:12	07:50	09:05
Bottom depth (m)	45.0		54.0	72.0	
Tide	Flooding	Flooding	Flooding	Flooding	Ebbing
Site selection	Pre-selected	Pre-selected	Pre-selected	Selected	Pre-selected
Remarks	Standard set	Standard set	Standard set	Standard set	Standard set

Appendix 1, Table 2 (cont'd)

Set no.	36	37	38	39	40
Station no.	40	4	3	2	11
Date	May 20, 1976	May 20, 1976	May 20, 1976	May 21, 1976	May 21, 1976
Location	Outside Genoa Bay	Descanso Point	Jack Point	Snake Island	Yellow Point
Time (PDT)	10:00	13:55	14:35	07:30	09:30
Bottom depth (m)	63.0	67.0	36.0	76.0	76.0
Tide	Ebbing	Ebbing	Ebbing	Flooding	Flooding
Site selection	Selected	Selected	Pre-selected	Pre-selected	Pre-selected
Remarks	Standard set	Standard set	Standard set	Standard set	Standard set

Appendix 1, Table 3. Set information, June 21-26, 1976.

Set no.	41	42	43	44	45
Station no.	5	6	9	8	7
Date	June 21, 1976	June 21, 1976	June 21, 1976	June 21, 1976	June 21, 1976
Location	Boat-Hatpour	Between Link Island and DeCourcy Is.	Ruxton Pass	Pylades Channel	Gabriola Pass
Time (PDT)	09:50	11:05	14:20	14:00	15:15
Bottom depth (m)	22.0	60.0	45.0	45.0	47.0
Tide	Flooding	Flooding	Flooding	Ebbing	Ebbing
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks	Standard set	Standard set	Standard set	Standard set	Standard set

Appendix 1, Table 3 (cont'd)

Set no.	46	47	48	49	50
Station no.	12	13	11	14	10
Date	June 21, 1976	June 21, 1976	June 21, 1976	June 22, 1976	June 22, 1976
Location	Blackberry Point	Porlier Pass	Yellow Point	Lady Smith Harbour	Kulléet Bay
Time (PDT)	16:40	17:55	18:57	07:50	09:15
Bottom depth (m)	40.0	56.0	94.0	40.0	55.0
Tide	Ebbing	Flooding	Flooding	Ebbing	Flooding
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks		Standard set	Standard set	Standard set	Standard set

Appendix 1, Table 3 (cont'd)

Set no.	51	52	53	54	55
Station no.	15	16	18	20	19
Date	June 22, 1976	June 22, 1976	June 22, 1976	June 22, 1976	June 22, 1976
Location	Center Stuart Channel	Telegraph Harbour	Tent Island	Willy Island	Houston Pass
Time (PDT)	10:25	11:45	13:20	14:40	15:50
Bottom depth (m)	40 f0	49.0	126.0	97.0	65.0
Tide	Flooding	Flooding	Flooding	Ebbing	Ebbing
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks	Standard set	Standard set	Standard set	Standard set	Standard set

Set no.	56	57	58	59	60
Station no.	22	21	23	17	24
Date	June 22, 1976	June 23, 1976	June 23, 1976	June 23, 1976	June 23, 1976
Location	South End, Stuart Channel	Crofton	Booth Bay	Secretary Island	Walker-Rock
Time (PDT)	16:50	07:47	08:55	10:55	12:05
Bottom depth (m)	205.0	40.0		27.0	63.0
Tide	Ebbing	Ebbing	Flooding	Flooding	Flooding
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks	Standard set	Standard set; many ctenophores	Standard set; some ctenophores, medusae	Standard set	Standard set

Appendix 1, Table 3 (cont'd)

Set no.	61	62	63	64	65
Station no.	28	30	25	29	31
Date	June 23, 1976	June 23, 1976	June 23, 1976	June 24, 1976	June 24, 1976
Location	Captain's Pass	Channel Is. Captain's Pass	Parker Island	Active Pass	South of Prevost Island
Time (PDT)	14:30	15:30	18:50	08:15	09:10
Bottom depth (m)	87.6			76.0	81.0
Tide	Flooding	Flooding	Ebbing	Ebbing	Ebbing
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks	Standard set			Standard set	Standard set

Appendix 1, Table 2 (cont'd)

Set no.	66	67	68	69	70
Station no.	37	36	35	38	39
Date	June 25, 1976	June 25, 1976	June 25, 1976	June 25, 1976	June 25, 1976
Location	Swanson Channel	Fulford Harbour	Coal Point	Saanich Inlet	Mill Bay
Time (PDT)	09:38	10:50	12:05	13:45	14:54
Bottom depth (m)	71.0	54.0	81.0	202.0	99.0
Tide	Ebbing	Flooding	Flooding	Flooding	Flooding
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks	Standard set; floats sunk	Standard set; floats sunk; many ctenophores	Standard set	Standard set; water haul, many ctenophores, medusae; corks sunk to 4.6 m	Standard set

Appendix 1, Table 3 (cont'd)

Set no.	71	72	73	74	75
Station no.	40	32	33	34	27
Date	June 25, 1976	June 25, 1976	June 25, 1976	June 25, 1976	June 26, 1976
Location	Separation Point	Head Cowichan Bay	Mouth Cowichan Bay	Hatch Point	Burgoyne Bay
Time (PDT)	16:20	17:20	18:15	19:15	07:30
Bottom depth (m)	54.0	54.0	54.0	69.0	69.0
Tide	Flooding	Flooding	Flooding	Ebbing	Ebbing
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks	Standard set	Standard set	Standard set	Standard set	Standard set

Appendix 1, Table 3 (cont'd)

Set no.	76	77	78	79	80
Station no.	26	4	3	2	1
Date	June 26, 1976	June 26, 1976	June 26, 1976	June 26, 1976	June 26, 1976
Location	Maple Bay	Off Harmac	Nanaimo River	Snake Island	Departure Bay
Time (PDT)	08:35	12:00	12:55	13:58	14:55
Bottom depth (m)	99.0	105.0	51.0	128.0	38.0
Tide	Ebbing	Flooding	Flooding	Flooding	Flooding
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks	Standard set	Corka over the bow	Standard set		

Appendix 1, Table 4. Set information, July 5-9, 1976.

Set no.	81	82	83	84	85
Station no.	11	10	41	11	10
Date	July 5, 1976	July 5, 1976	July 5, 1976	July 5, 1976	July 5, 1976
Location	Yellow Point	Kulleet Bay	Center Stuart Channel	Yellow Point	Kulleet Bay
Time (PDT)	13:35	14:30	15:07	22:12	23:25
Bottom depth (m)	60.0	45.0	81.0	69.0	45.0
Tide	Ebbing	Ebbing	Ebbing	Flooding	Ebbing
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks	Standard set	Standard set	Standard set	Night set	Night set

Appendix 1, Table 4 (cont'd)

Set no.	86	87	88	89	90
Station no.	41	15	15	10	11
Date	July 6, 1976	July 6, 1976	July 6, 1976	July 6, 1976	July 6, 1976
Location	Center Stuart Channel	Scott Island	Center Stuart Channel	Kulleet Bay	Yellow Point
Time (PDT)	00:55	02:10	12:12	13:15	14:10
Bottom depth (m)	78.0	85.0	87.0	52.0	82.0
Tide	Ebbing	Ebbing	Flooding	Ebbing	Ebbing
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks	Night set	Night set	Standard set	Standard set	Standard set

Appendix i. Table 4 (cont'd)

Set no.	91	92	93	94	95
Station no.	10	11	41	15	25
Date	July 6, 1976	July 6, 1976	July 7, 1976	July 7, 1976	July 7, 1976
Location	Kulleet Bay	Yellow Point	Center Stuart Channel	Scott Island	Parker Island
Time (PDT)	22:00	23:20	00:20	01:40	13:25
Bottom depth (m)	50.0	87.0	76.0	87.0	45.0
Tide	Flooding	Flooding	Ebbing	Ebbing	Flooding
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks	Night set	Night set	Night set	Night set	Standard set

Appendix 1. Table 4 (continued)

Set no.	96	97	98	99	100
Station no.	29	29	28	29	29
Date	July 7, 1976	July 7, 1976	July 7, 1976	July 8, 1976	July 8, 1976
Location	Active Pass	Active Pass	Captain's Pass	Active Pass Ben Mohr Park	Active Pass Hawkins
Time (PDT)	14:15	14:58	15:50	12:45	13:40
Bottom depth (m)	47.0	54.0	92.0	38.0	54.0
Tide	Flooding	Slack	Ebbing	Flooding	Flooding
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks	Net flattened by tide	Standard set	Standard set	Standard set	Standard set

Appendix 2, Table 4 (cont'd)

Set no.	101	102	103	104	105
Station no.	25	28	28	28	29
Date	July 8, 1976	July 8, 1976	July 8, 1976	July 8, 1976	July 8, 1976
Location	South Parker Island	Captain's Pass	Captain's Pass	Captain's Pass	Active Pass
Time (PDT)	14:35	15:25	15:55	21:50	22:52
Bottom depth (m)	51.0	92.0	91.0	91.0	51.0
Tide	Flooding	Flooding	Slack	Slack	Flood
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks	Standard set	Standard set	Standard set	Night set	Night set

Appendix 1, Table 4 (cont'd)

Set no.	106	107
Station no.	29	25
Date	July 8, 1976	July 9, 1976
Location	Active Pass Ben Mohr Rock	Parker Island
Time (PDT)	23:35	00:25
Bottom depth (m)	40.0	51.0
Tide	Flooding	Flooding
Site selection	Pre-selected	Pre-selected
Remarks	Night set	Night set

Appendix 1, Table 5. Set information, August 3-10, 1976.

Set no.	108	109	110
Station no.	7		
Date	Aug. 3, 1976	Aug. 3, 1976	Aug. 3, 1976
Location	Gabriola Pass	Center Pylades Channel	Yellow Point
Time (PDT)	12:11	12:55	21:55
Bottom depth (m)	40.0	38.0	91.0
Tide	Ebbing	Ebbing	Flooding
Site selection	Pre-selected	Preselected	Pre-selected
Remarks			Night set

Appendix 1, Table 5 (cont'd)

Set no.	111	112	113	114	115
Station no.	10	41	15	11	10
Date	Aug. 3, 1976	Aug. 4, 1976	Aug. 4, 1976	Aug. 4, 1976	Aug. 4, 1976
Location	Kulleet Bay	Mouth Ladysmith Harbour	Center Stuart Channel	Yellow Point	Kulleet Bay
Time (PDT)	23:26	01:20	02:18	12:32	13:20
Bottom depth (m)	33.0	81.0	83.0	87.0	63.0
Tide	Ebbing	Ebbing	Ebbing	Flooding	Ebbing
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks	Night set	Night set	Night set		

Appendix 1, Table 6 (cont'd)

Set no.	26	27	28	29	30
Station no.	120	120	122	122	114
Date	Aug. 29, 1976	Aug. 29, 1976	Aug. 29, 1976	Aug. 29, 1976	Aug. 29, 1976
Location	Exeter Shoal	Exeter Shoal	Texada Mines	Texada Mines	Achilles Shoal
Time (PDT)	10:50	11:15	12:15	12:50	14:30
Bottom depth (m)	79	79	128	98	83
Tide	Ebbing	Ebbing	Ebbing	Ebbing	Flooding
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks					

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Appendix 1, Table 5 (cont'd)

Set no.	116	117	118	119	120
Station no.	41	15	16	18	21
Date	Aug. 4, 1976	Aug. 4, 1976	Aug. 4, 1976	Aug. 4, 1976	Aug. 5, 1976
Location	Center Stuart Channel, off Killeet Bay	Scott Island	Alarm Rock	Tent Island	Crofton
Time (PDT)	14:20	15:00	15:55	16:45	08:45
Bottom depth (m)	81.0	83.0	53.0	108.0	63.0
Tide	Ebbing	Ebbing	Ebbing	Ebbing	Flooding
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks					

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Appendix 1, Table 6 (cont'd)

Set no.	31	32	33	34	35
Station no.	106	92	94	96	112
Date	Aug. 29, 1976	Aug. 30, 1976	Aug. 31, 1976	Aug. 31, 1976	Aug. 31, 1976
Location	Davies Bay	Secret Cove, Entrance	Nelson Rock	Mid-Channel off Cape Cockburn	North East Point
Time (PDT)	15:35	17:15	08:10	09:15	10:35
Bottom depth (m)	99	58	198	351	242
Tide	Flooding	Flooding	Flooding	Flooding	Flooding
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks	Ripped net				

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Appendix 1, Table 5 (cont'd)

Set no.	121	122	123	124	125
Station no.	20	19	22	23	26
Date	Aug. 5, 1976	Aug. 5, 1976	Aug. 5, 1976	Aug. 5, 1976	Aug. 5, 1976
Location	Willy Island	Houston Passage	Stuart Channel	Booth Bay	Maple Bay
Time (PDT)	09:50	10:40	11:20	12:42	13:38
Bottom depth (m)	126.0	87.0	206.0	36.0	83.0
Tide	Flooding	Flooding	Flooding	Flooding	Ebbing
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks					

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Appendix 1, Table 5 (cont'd)

Set no.	126	127	128	129	130
Station no.	27	40	32	33	38
Date	Aug. 5, 1976	Aug. 5, 1976	Aug. 5, 1976	Aug. 5, 1976	Aug. 6, 1976
Location	Burgoyne Bay	Cowichan Bay	Head Cowichan Bay	Cowichan Bay South	McCurdy Point
Time (PDT)	14:30	15:45	16:30	17:15	09:10
Bottom depth (m)	40.0	61.0	54.0	51.0	106.0
Tide	Ebbing	Ebbing	Ebbing	Ebbing	Ebbing
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks					

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Appendix 1, Table 5 (cont'd)

Set no.	131	132	133	134	135
Station no.	39	35	34	36	37
Date	Aug. 6, 1976	Aug. 6, 1976	Aug. 6, 1976	Aug. 6, 1976	Aug. 6, 1976
Location	Mill Bay	Coal Point	Hatch Point	Fulford Harbour	Swanson Channel
Time (PDT)	10:32	11:35	12:30	18:42	14:36
Bottom depth (m)	27.0	108.0	45.0	38.0	69.0
Tide	Flooding	Flooding	Flooding	Flooding	Flooding
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks					

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Appendix 1, Table 5 (cont'd)

Set no.	136	137	138	139	140
Station no.	31	30	29	28	25
Date	Aug. 6, 1976	Aug. 6, 1976	Aug. 7, 1976	Aug. 7, 1976	Aug. 7, 1976
Location	Prevost Island	Channel Island	Active Pass	Captain's Pass	Parker Island
Time (PDT)	15:50	16:35	08:25	09:14	10:00
Bottom depth (m)	31.0	38.0	92.0	83.0	42.0
Tide	Ebbing	Ebbing	Ebbing	Ebbing	Flooding
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks					

Appendix 1, Table 2 (cont'd)

Set no.	141	142	143	144	145
Station no.	24	17	13	12	9
Date	Aug. 7, 1976	Aug. 7, 1976	Aug. 7, 1976	Aug. 7, 1976	Aug. 7, 1976
Location	Walker Rock	Secretary Island	Portlier Pass	Blackberry Point	Ruxton Pass
Time (PDT)	11:00	12:32	13:25	14:35	16:00
Bottom depth (m)	51.0	40.0	54.0	52.0	41.0
Tide	Flooding	Flooding	Flooding	Flooding	Ebbing
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks			Strong tide		

Appendix 1, Table 5 (cont'd)

Set no.	146	147	148	149	150
Station no.	6	5	3	4	2
Date	Aug. 7, 1976	Aug. 7, 1976	Aug. 8, 1976	Aug. 8, 1976	Aug. 8, 1976
Location	DeCourcey Is.	Boat Harbour	Nanaimo River	Harmac	Snake Island
Time (PDT)	16:56	17:40	07:35	08:25	09:25
Bottom depth (m)	61.0	33.0	42.0	99.0	117.0
Tide		Ebbing	Ebbing	Ebbing	Ebbing
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks				22 m light surface layer; scattering at 36 m	Scatter layer at 18 m

Appendix 1, Table 5 (cont'd)

Set no.	151	152	153	154	155
Station no.	1				
Date	Aug. 8, 1976	Aug. 9, 1976	Aug. 9, 1976	Aug. 9, 1976	Aug. 9, 1976
Location	Departure Bay	1 mile West Pt. Grey Traffic Buoy	1 mile West Point Grey	West Point Grey	West Point Grey
Time (PDT)	10:10	09:26	10:20	11:10	12:10
Bottom depth (m)	42.0	169.0	162.0	176.0	216.0
Tide					
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks	Surface to 19 m scatter layer	Scatter layers: 0 m to 20 m; 36 m to 40 m	Scatter layers: 0 m to 22 m; 43 m to 45 m	Scatter layers: 0 m to 18 m; 40 m to 58 m	Scatter layers: 0 m to 18 m; 45 m to 49 m

Appendix 1, Table 5 (cont'd)

Set no.	156	157	158	159
Station no.				
Date	Aug. 9, 1976	Aug. 9, 1976	Aug. 10, 1976	Aug. 10, 1976
Location	Point Grey	Point Grey	Departure Bay	Nanaimo River
Time (PDT)	13:15	13:45	08:50	09:55
Bottom depth (m)	226.0	226.0	31.0	42.0
Tide	Flooding	Flooding	Ebbing	Ebbing
Site selection	Pre-selected	Pre-selected		Pre-selected
Remarks	Scatter layers: 0 m to 15 m; 20 m to 40 m	Scatter layer: 0 m to 9 m		

Appendix 1, Table 6. Set information, August 24-September 2, 1976.

Set no.	1	2	3	4	5
Station no.	148	148	156	158	158
Date	Aug. 24, 1976	Aug. 24, 1976	Aug. 25, 1976	Aug. 25, 1976	Aug. 25, 1976
Location	Savary Island	Savary Island	Inside Hernandeo Island	Baker Pass	Baker Pass
Time (PDT)	16:15	17:00	08:00	09:00	09:40
Bottom depth (m)	141	144	281	126	126
Tide	Flooding	Flooding	Ebbing	Ebbing	Ebbing
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks					

Appendix 2, Table 6 (cont'd)

Set no.	6	7	8	9	10
Station no.	164	166	160	160	154
Date	Aug. 25, 1976	Aug. 25, 1976	Aug. 25, 1976	Aug. 25, 1976	Aug. 25, 1976
Location	Marine Island N. St. of Georgia	Whale Town Bay	Mid-Channel N. St. of Georgia	Mid-Channel N. St. of Georgia	Mitlenatch Is., N. St. of Georgia
Time (PDT)	10:55	12:30	13:55	14:32	16:10
Bottom depth (m)	72	83	271	271	173
Tide	Ebbing	Ebbing	Flooding	Flooding	Flooding
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks					

Appendix 1, Table 6 (cont'd)

Set no.	11	12	13	14	15
Station no.	146	140	140	162	138
Date	Aug. 26, 1976	Aug. 26, 1976	Aug. 26, 1976	Aug. 26, 1976	Aug. 27, 1976
Location	Mace Point	Harwood Island	Harwood Island	Shelter Point	Powell River
Time (PDT)	07:40	09:10	09:50	12:30	08:45
Bottom depth (m)	130	91	91	54	
Tide	Ebbing	Ebbing	Ebbing	Ebbing	Ebbing
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks					

Appendix 1, Table 5 (cont'd)

Set no.	16	17	18	19	20
Station no.	130	136	144	150	152
Date	Aug. 28, 1976	Aug. 28, 1976	Aug. 28, 1976	Aug. 28, 1976	Aug. 28, 1976
Location	Crescent Bay	Gulf Centre; N. St. of Georgia	Gulf Centre; N. St. of Georgia	Gulf Centre; N. St. of Georgia	Kuhushan Point
Time (PDT)	07:46	09:00	10:05	11:20	12:36
Bottom depth (m)	87	317	271		53
Tide	High slack	Ebbing	Ebbing	Ebbing	Ebbing
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks		Tidal interference with set			

Appendix 1, Table 6 (cont'd)

Set no.	21	22	23	24	25
Station no.	142	142	132	132	134
Date	Aug. 28, 1976	Aug. 28, 1976	Aug. 28, 1976	Aug. 28, 1976	Aug. 29, 1976
Location	Little River	Little River	Cape Lazo Bar	Cape Lazo Bar	Seal Island
Time (PDT)	14:20	14:50	16:10	16:45	08:40
Bottom depth (m)	67	67	105	406	40
Tide	Ebbing	Ebbing	Flooding	Flooding	Flooding
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks				Water haul	

Appendix 1, Table 6 (cont'd)

Set no.	36	37	38	39	40
Station no.	124	126	128	108	110
Date	Aug. 31, 1976	Aug. 31, 1976	Aug. 31, 1976	Aug. 31, 1976	Aug. 31, 1976
Location	Lang Bay	Raven Bay	Grief Point	Thunder Bay	Vanguard Bay
Time (PDT)	11:40	12:55	13:50	15:55	17:10
Bottom depth (m)	65	91	94	105	550-575-m
Tide	Flooding	Flooding	Flooding	Flooding	Flooding
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks					

Appendix 1, Table 6 (cont'd)

Set no.	41	42	43	44	45
Station no.	90	98	104	102	116
Date	Sep. 1, 1976	Sep. 1, 1976	Sep. 1, 1976	Sep. 1, 1976	Sep. 1, 1976
Location	Partington Point; Sabine Channel	Fegan Island	Sisters Island	Mid-Channel N. Str. of Georgia	Lambert Ch.
Time (PDT)	08:35	09:48	10:45	12:35	13:35
Bottom depth (m)	324	51	198	143	145
Tide	Flooding	Flooding	Flooding	Flooding	Ebbing
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks			Heavy tide - set fouled		

Appendix i, Table 6 (cont'd)

Set no.	46	47	48	49	50
Station no.	118				
Date	Sep. 1, 1976	Sep. 2, 1976	Sep. 2, 1976	Sep. 2, 1976	Sep. 2, 1976
Location	Fanny Bay.	Dashwood, Little Qualicum	French Creek	French Creek	Sangster Island
Time (PDT)	14:55	08:50	10:20	10:50	12:20
Bottom depth (m)	58	78	63	47	153
Tide	Ebbing	Flooding	Flooding	Flooding	Ebbing
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks					

Appendix 1, Table 7. Set information, September 7-15, 1976.

Set no.	160	161	162	163	164
Station no.	11	42	10	41	41
Date	Sep. 8, 1976	Sep. 8, 1976	Sep. 8, 1976	Sep. 9, 1976	Sep. 9, 1976
Location	Yellow Point	Tree Island	Kulleet Bay	Center Stuart Channel	Center Stuart Channel
Time (PDT)	20:40	21:50	23:00	00:15	14:10
Bottom depth (m)	79	40	51	76	80
Tide	Ebbing	Ebbing	Ebbing	Flooding	Flooding
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks	Night set	Night set	Night set	Night set	

Appendix i. Table 7 (cont'd)

Set no.	165	166	167	168	169
Station no.	11	10	15	21	23
Date	Sep. 9, 1976	Sep. 9, 1976	Sep. 9, 1976	Sep. 10, 1976	Sep. 10, 1976
Location	Yellow Point	Kulleet Bay	Scott Island	Crofton	Booth Bay
Time (PDT)	15:10	15:55	17:10	08:50	10:20
Bottom depth (m)	80	51	81	60	45
Tide	Flooding	Flooding	Ebbing	Ebbing	Ebbing
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks					

Appendix 1, Table 7 (cont'd)

Set no.	170	171	172	173	174
Station no.	22	6	5	9	7
Date	Sep. 10, 1976	Sep. 13, 1976	Sep. 13, 1976	Sep. 13, 1976	Sep. 13, 1976
Location	Center Stuart Channel	Decourcey Island	Boat Harbour	Ruxton Pass	Gabriola Pass
Time (PDT)	11:35	09:40	10:52	11:45	12:05
Bottom depth (m)	198	58	45	43	44
Tide	Ebbing	Ebbing	Ebbing	Ebbing	Ebbing
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks					

Appendix I, Table 7 (cont'd)

Set no.	175	176	177	178	179
Station no.	8	12	13	17	24
Date	Sep. 13, 1976	Sep. 13, 1976	Sep. 13, 1976	Sep. 13, 1976	Sep. 13, 1976
Location	False Narrows	Blackberry Point	Portier Pass	Secretary Island	Walker Rock
Time (PDT)	13:45	14:50	15:50	16:47	17:55
Bottom depth (m)	58	49		38	45
Tide	Ebbing			Flooding	Flooding
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks					

Appendix 1, Table 7 (cont'd.)

Set no.	180	181	182	183	184
Station no.	30.	28	25	29	31
Date	Sep. 14, 1976	Sep. 14, 1976	Sep. 14, 1976	Sep. 14, 1976	Sep. 14, 1976
Location	Channel Island	Captain's Pass	Parker Island	Active Pass	Prevost Island
Time (PDT)	08:25	09:30	10:28	11:10	12:05
Bottom depth (m)	29	99	47	60	78
Tide	Flooding	Ebbing	Ebbing	Ebbing	Ebbing
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks					

Appendix 1, Table 7 (cont'd)

Set no.	185	186	187	188	189
Station no.	37	36	35	38	39
Date	Sep. 14, 1976	Sep. 14, 1976	Sep. 14, 1976	Sep. 14, 1976	Sep. 14, 1976
Location	Swanson Channel	Fulford Harbour	Coal Point	McCurdy Point	Mill Bay
Time (PDT)	13:05	14:10	15:18	16:45	18:05
Bottom depth (m)	72	36	69	90	56
Tide	Ebbing	Ebbing	Flooding	Flooding	Flooding
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks					

Appendix I. Table 7 (cont'd)

Set no.	190	191	192	193	194
Station no.	34	32	33	40	27
Date	Sep. 14, 1976	Sep. 15, 1976	Sep. 15, 1976	Sep. 15, 1976	Sep. 15, 1976
Location	Hatch Point	Cowichan Bay	Mouth Cowichan Bay	Cowichan Bay North	Burgoyne Bay
Time (PDT)	18:55	09:05	09:45	10:30	11:40
Bottom depth (m)	65	54	54	60	63
Tide	Flooding	Flooding	Flooding	Flooding	Ebbing
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks					

Appendix 1, Table 7 (cont'd)

Set no.	195	196	197	198	199
Station no.	26	19	20	18	16
Date	Sep. 15, 1976	Sep. 15, 1976	Sep. 15, 1976	Sep. 15, 1976	Sep. 15, 1976
Location	Maple Bay	Houston Passage	Willy's Island	Center Stuart Channel	Telegraph Harbour
Time (PDT)	12:35	14:00	14:50	15:30	16:15
Bottom depth (m)	81	85	124	114	49
Tide	Ebbing	Ebbing	Ebbing	Ebbing	Ebbing
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	*
Remarks					

Appendix 1, Table 7 (cont'd)

Set no.			
Station no.			
Date	Sep. 7, 1976		
Location	North Arm Jetty Area Fraser River		
Time (PDT)			
Bottom depth (m)			
Tide			
Site selection			
Remarks	6 sets made		

Appendix 1, Table 8. Set Information, September 20-23, 1976.

Set no.	1	2	3	4	6
Station no.	53	53	55	57	57
Date	Sep. 20, 1976	Sep. 20, 1976	Sep. 20, 1976	Sep. 20, 1976	Sep. 20, 1976
Location	Lock Bay	Lock Bay	Mid.-Gulf St. of Georgia	McColl Bank	McColl Bank
Time (PDT)	10:10	10:58	12:15	13:35	14:05
Bottom depth (m)	72	70	378	72	78
Tide	Flooding	Flooding	Flooding	Flooding	Flooding
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks					

Appendix: Table 8 (cont'd)

Set no.	6	7	8	9	10
Station no.	64	59	65	67	63
Date	Sep. 20, 1976	Sep. 20, 1976	Sep. 21, 1976	Sep. 21, 1976	Sep. 21, 1976
Location	Cape Roger Curtia	Flat Top Island	Mid-Gulf St. of Georgia	Mid-Gulf St. of Georgia	Bowyer Island
Time (PDT)	15:30	17:40	08:25	09:30	11:35
Bottom depth (m)	119	162	368	303	173
Tide	Flooding	Ebbing	Ebbing	Flooding	Flooding
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks					

Appendix 1, Table 1 (cont'd)

Set no.	11	12	13	14	15
Station no.	61	69	71	72	73
Date	Sep. 21, 1976	Sep. 21, 1976	Sep. 21, 1976	Sep. 21, 1976	Sep. 22, 1976
Location	Cristie Island	Point Grey	English Bay	Iona Island Jetty	Porlier Pass
Time (PDT)	12:45	14:40	15:35	17:25	09:25
Bottom depth (m)	23	133	33	71	202
Tide	Flooding	Flooding	Flooding	Ebbing	Ebbing
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks					

Appendix A, Table 3 (cont'd)

Set no.	16	17	18	19	20
Station no.	73	75	77	77	79
Date	Sep. 22, 1976	Sep. 22, 1976	Sep. 22, 1976	Sep. 22, 1976	Sep. 22, 1976
Location	Porlier Pass	Mid.-Gulf St. of Georgia	Sand Heads	Sand Heads	Mid-Gulf St. of Georgia
Time (PDT)	09:55	10:55	11:55	12:35	13:55
Bottom depth (m)	202	330	202	202	227
Tide	Ebbing	Flooding	Flooding	Flooding	Flooding
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks					

Appendix 1, Table 8 (cont'd)

Set no.	21	22	23	24	25
Station no.	81	83	83	49	3
Date	Sep. 22, 1976	Sep. 23, 1976	Sep. 23, 1976	Sep. 23, 1976	Sep. 23, 1976
Location	Salamanca Pt.	Edith Point	Edith Point	Hammond Bay	Nanaimo River
Time (PDT)	15:22	08:30	09:05	14:00	15:00
Bottom depth (m)	56	74	75	141	45
Tide	Flooding	Ebbing	Ebbing	Flooding	Flooding
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks					

Appendix 1. Table 8 (cont'd)

Set no.	26					
Station no.	1					
Date	Sep. 23, 1976					
Location	Departure Bay					
Time (PDT)	15:55					
Bottom depth (m)	40					
Tide	Flooding					
Site selection	Pre-selected					
Remarks						

Appendix 1, Table 9. Set information, October 14-24, 1976.

Set no.	200	201	202	203	204
Station no.	1	6	5	9	7
Date	Oct. 14, 1976	Oct. 18, 1976	Oct. 18, 1976	Oct. 18, 1976	Oct. 18, 1976
Location	Departure Bay	Link Island	Boat Harbour	Ruxton Pass	Gabriola Pass
Time (PDT)	13:46	10:30	11:15	12:03	13:12
Bottom depth (m)	38	56	27	41	58
Tide	Ebbing	Flooding	Flooding	Flooding	Ebbing
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks					

Appendix 1, Table 9 (cont'd)

Set no.	205	206	207	208	209
Station no.	8	12	13	11	10
Date	Oct. 18, 1976	Oct. 18, 1976	Oct. 18, 1976	Oct. 19, 1976	Oct. 19, 1976
Location	Phylades Ch.	Phylades Ch.	Porlier Pass	Yellow Point	Kulleet Bay
Time (PDT)	13:45	14:40	15:35	10:00	10:40
Bottom depth (m)	53	53	51	81	51
Tide	Ebbing	Ebbing	Ebbing	Flooding	Flooding
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks		Water Haul			

Appendix 1, Table 3 (cont'd)

Set no.	210	211	212	213	214
Station no.	41	15	16	11	10
Date	Oct. 19, 1976	Oct. 19, 1976	Oct. 19, 1976	Oct. 19, 1976	Oct. 19, 1976
Location	Stuart Channel	Scott Island	Telegraph Harbour	Yellow Point	Kulleet Bay
Time (PDT)	11:30	12:10	12:55	19:10	20:00
Bottom depth (m)	76	83	49	81	52
Tide	Flooding	Flooding	Flooding	Ebbing	Ebbing
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks				Night set	Night set

Appendix 1, Table 9 (cont'd)

Set no.	215	216	217	218	219
Station no.	41	15	21	20	18
Date	Oct. 19, 1976	Oct. 19, 1976	Oct. 20, 1976	Oct. 20, 1976	Oct. 20, 1976
Location	Stuart Ch.	Scott Island	Crofton	Willy's Is.	Tent Island
Time (PDT)	20:55	21:40	09:15	10:00	10:50
Bottom depth (m)	76	83	40	91	116
Tide	Ebbing	Ebbing	Flooding	Flooding	Flooding
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks	Night set	Night set			

Appendix 1, Table 9 (cont'd)

Set no.	220	221	222	223	224
Station no.	19	22	23	26	27
Date	Oct. 20, 1976	Oct. 20, 1976	Oct. 20, 1976	Oct. 20, 1976	Oct. 20, 1976
Location	Houston Pass	Stuart Channel South	Booth Bay	Maple Bay	Burgoynes Bay
Time (PDT)	11:40	12:25	13:30	14:30	15:25
Bottom depth (m)	67	213	27	89	51
Tide	Flooding	Flooding	Ebbing	Ebbing	Ebbing
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks					

Appendix 1, Table 3 (cont'd)

Set no.	225	226	227	228	229
Station no.	40	32	33	34	39
Date	Oct. 20, 1976	Oct. 20, 1976	Oct. 21, 1976	Oct. 21, 1976	Oct. 21, 1976
Location	Cowichan Bay North	Cowichan Bay Head	Cowichan Bay South	Hatch Point	Mill Bay
Time (PDT)	16:25	17:05	09:30	10:25	11:15
Bottom depth (m)	58	57	49	63	45
Tide	Ebbing	Ebbing	Flooding	Flooding	Flooding
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks	Water Haul				

Appendix 1, Table 9 (cont'd)

Set no.	230	231	232	233	234
Station no.	38	35	36	37	31
Date	Oct. 21, 1976	Oct. 21, 1976	Oct. 21, 1976	Oct. 21, 1976	Oct. 21, 1976
Location	McCurdy Point	Coal Point	Fulford Harbour	Swanson Channel	Prevost Island
Time (PDT)	12:33	13:55	15:10	16:05	16:55
Bottom depth (m)	162	87	38	76	72
Tide	Flooding	Flooding	Flooding	High slack	Ebbing
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks					

Set no.	235	236	237	238	239
Station no.	30	25	29	28	24
Date	Oct. 21, 1976	Oct. 22, 1976	Oct. 22, 1976	Oct. 22, 1976	Oct. 22, 1976
Location	Channel Is.	Parker Island	Active Pass	Captain's Pass	Walker Rock
Time (PDT)	17:40	08:48	09:25	10:05	11:20
Bottom depth (m)	33	49	42	87	49
Tide	Ebbing	Ebbing	Ebbing	Ebbing	Flooding
Site selection	Pre-selected	Pre-selected	Pre-selected	Pre-selected	Pre-selected
Remarks	Water haul	Water haul			Water haul

Appendix i, Table 9 (cont'd)

Set no.	240	241	242
Station no.	17	3	4
Date	Oct. 22, 1976	Oct. 25, 1976	Oct. 25, 1976
Location	Secretary Is.	Nanaimo River	Harmac
Time (PDT)	12:25	09:10	
Bottom depth (m)	36	40	101
Tide	Flooding	Ebbing	Ebbing
Site selection	Pre-selected	Pre-selected	Pre-selected
Remarks			

Appendix 2, Table 1. Species and numbers captured, May 11-21, 1976.

Species	Set no.														28
	15	16	17	18	19	20	21	22	23	24	25	26	27		
River lamprey	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Pacific lamprey	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Chum salmon	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Chinook salmon	3	-	6	3	2	-	-	-	-	-	-	-	1	-	
Coho salmon	-	-	1	9	-	-	-	-	2	-	-	-	116	1	
Pink salmon	-	-	-	-	-	-	-	-	-	-	2	-	-	-	
Sockeye salmon	3	1	2	-	-	-	7	3	102	46	-	-	54	-	
Spiny dogfish	114	1	-	-	-	-	-	-	-	1	1	-	1	-	
Pacific herring	3 ^b	32	909 ^b	12	-	-	-	-	36	-	-	-	-	-	
Walleye pollock	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Plainfin midshipmen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Threespine stickleback	-	348	-	-	-	-	-	-	1	3	-	1	-	-	
Northern anchovy	-	-	-	-	-	-	-	-	-	-	1	-	-	-	
Pacific sand lance	-	-	-	-	-	-	-	-	-	1	-	-	7	-	
Lingcod ^a	-	-	-	-	-	40	-	-	-	-	-	-	-	-	
Steelhead	-	-	-	-	-	-	-	-	-	1	-	-	-	-	

Appendix 2, Table 1 (cont'd)

[illegible]

Appendix 2, Table 1 (cont'd)

Species	Set no.												Total
	29	30	31	32	33	34	35	36	37	38	39	40	
River lamprey	-	-	-	-	-	-	-	-	-	-	-	-	-
Pacific lamprey	-	-	-	-	-	-	-	-	-	-	-	-	-
Chum salmon	-	1	-	-	-	-	1	40	-	-	21	31	163
Chinook salmon	4	2	-	2	2	1	1	1	-	21	2	3	94
Coho salmon	-	55	49	-	-	-	109	-	1	2	4	-	353
Pink salmon	-	-	-	-	-	-	-	-	-	-	21	-	62
Sockeye salmon	-	-	-	-	-	2	-	-	-	-	-	-	250
Spiny dogfish	-	-	1	2	-	5	-	-	-	-	-	-	635
Pacific herring	-	-	3 ^b	-	-	-	-	-	-	-	-	96	~965 ^b
Walleye pollock	-	-	-	-	-	-	-	-	-	-	-	-	-
Plainfin midshipmen	-	-	-	-	-	-	-	-	-	-	-	-	-
Threespine stickleback	-	-	-	-	-	1	8	9	13	-	-	-	411
Northern anchovy	-	-	-	-	-	-	-	-	1	-	-	-	2
Pacific sand lance	-	-	-	-	-	-	-	-	-	-	-	-	9
Lingcod ^a	-	-	-	-	-	-	-	-	6	23	7	15	91
Steelhead	-	-	-	-	-	-	-	-	-	-	-	-	2

^a larval

^b weight/kg

Appendix 2, Table 2. Length frequency - lingcod,
May 11-21, 1976.

Fork length (cm)	Set No.						Total
	9	20	37	38	39	40	
1							0
2			3				3
3		4	1			2	7
4		24	2	2		6	34
5		8		7	1	2	18
6	3	3		12	6	4	28
7				2			2
8							0
9		1					1
10							0
-							
-							
-							
33						1	1
Total	3	40	6	23	7	15	94

Appendix 2, Table 3. Length frequency - stickleback, May 11-21, 1976.

Fork length (cm)	Set Number														Total
	8	10	11	13	14	16	23	24	26	34	35	36	37		
1															
2															
3															
4						1							1	2	
5	3		1	1		12				3	1			21	
6	1	1	7		2	33	1	3	1	4	6	10		69	
7			5			5			1	1	2	2		16	
Total	4	1	13	1	2	51	1	3	1	1	8	9	13	108	

Appendix 2, Table 4. Length frequency - herring, May 11-21, 1976.

Fork length (Cm)	Set no.												Total
	4	6	8	12	13	15	16	17	18	23	31	40	
9		1											1
10													0
11					2								2
12					16								16
13					6						2		8
14					1								1
15					3			3			1	5	12
16					4		4	10				14	32
17					20		12	26	1			24	83
18					22		9	10	1			20	62
19				1	12	2	3	7	6	3		18	52
20	1				9		3	2	1	15		8	39
21				1				1	1	7		3	13
22									1	4		2	7
23	4					1	1		1	2		1	10
24	4									4		1	9
25	1		2					1		1			5
26													0
27			1										1
28			1										1
29								1					1
Total	10	1	4	2	95	3	37	61	12	36	3	96	355

5

[illegible]

Appendix 2, Table 5 (cont'd)

[illegible]

Appendix 2, Table 5 (cont'd)

Total length (cm)	Set no.														
	10			13			14			15			16		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
114															
115															
116															
117															
118															
119															
Total	6	1	7	1	1	2	24	26	50	23	2	25	1	0	1

Appendix 2, Table 5 (cont'd)

[illegible]

Appendix 2, Table 5 (cont'd)

[illegible]

Appendix 2, Table 5 (cont'd)

Total length (cm)	Set no.														
	24			25			27			31			32		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
114															
115															
116															
117															
118															
119															
Total	1	0	1	0	1	1	1	0	1	0	1	1	1	1	2

Appendix 2, Table 5 (cont'd)

Total length (cm)	Set no.					
	34			Totals		
	M	F	T	M	F	T
25						
26						
27					2	2
28				3		3
29					2	2
30				4	2	6
31				3	1	4
32				2	5	7
33				3	5	8
34				3	5	8
35				2	3	5
36				2	1	3
37				1	3	4
38				1	1	2
39						
40	1		1	4		4
41						
42				1		1
43				1		1
44		1	1		1	1
45						
46						
47						
48						
49				1		1
50						
51						
52						
53	1		1	2		2
54						
55	1	1	2	2	1	3
56				1		1
57						
58						
59				1		1
60						
61						
62				1	1	2
63				1		1
64						
65						
66						
67						
68						
69						

Appendix 2, Table 5 (cont'd)

Total length (cm)	Set no.					
	34			Totals		
	M	F	T	M	F	T
70						
71				1		1
72						
73						
74				1		1
75						
76						
77						
78						
79						
80						
81				2		2
82				2		2
83				3		3
84						
85				2		2
86				2		2
87				2		2
88				3		3
89				1	1	2
90						
91				3		3
92						
93						
94						
95						
96						
97						
98						
99						
100						
101				1	1	
102						
103						
104						
105						
106						
107						
108						
109						
110						
111						
112						
113						

Appendix 2, Table 5 (cont'd)

Total length (cm)	Set No.			Totals		
	34					
	M	F	T	M	F	T
114						
115						
116						
117						
118						
119						
Total	3	2	5	61	35	96

Appendix 2, Table 6. Length frequency of sockeye salmon, May 11-21, 1976.

Fork length (cm)	Set No.													Total
	4	7	13	14	15	16	17	21	22	23	24	27	34	
7						1								1
8		12	2	1				4	3	75	1	1		99
9		12	1		2		1	3		21	12	4	2	58
10	1				1		1			5	21	11		40
11		1								1	11	19		32
12											0	13		13
13											1	5		6
14												1		1
15														0
Total	1	25	3	1	3	1	2	7	3	102	46	54	2	250

Appendix 2, Table 7. Length frequency of pink salmon, May 11-21, 1976.

Fork length (cm)	Set No.							Total
	1	4	6	8	11	25	39	
1								0
2								0
3	3					2	2	7
4	29	1	2		1		18	51
5	1	0		1			1	3
6		1						1
Total	33	2	2	1	1	2	21	62

Appendix 2, Table 8. Length frequency of chum salmon, May 11-21, 1976.

Fork length (cm)	Set No.											Total
	1	8	10	11	12	13	30	35	36	39	40	
4	7								21	11		39
5									19	9		28
6		1		1			1			1		4
7		0		0	1							1
8		0	1	0							11	12
9		1	1	3		7					12	24
10			2	24		10		1			3	40
11				8		1					3	12
12				1							1	2
13											1	1
Total	7	2	4	37	1	18	1	1	40	21	31	163

Appendix 2, Table 9. Length frequency of coho salmon, May 11-21, 1976.

Fork length (cm)	Set No.													Total
	10	14	17	18	23	27	28	30	31	35	37	38	39	
8										3				3
9								2		11				13
10					2	5		9	2	42				60
11						26		23	9	28				86
12						35		15	15	15				80
13						31		4	11	6				52
14	1			1		15		2	9	4				32
15				2		2			2					6
16				3		1			1				1	6
17	1			3		1								5
18													1	1
19														0
20														0
21														0
22														0
23														0
24														0
25														0
26														0
27														0
28														0
29														0
30														0
31														0
32														0
33														0
34														0
35														0
36														0
37														0
38														0
39														0
40														0
41														0
42														0
43		2												2
44			1				1							2
45														0
46													1	1
47													1	1
48												1		1
49												1		1
50														0
51											1			1
Total	2	2	1	9	2	116	1	55	49	109	1	2	4	353

Appendix 2, Table 10. Length frequency of chinook salmon, May 11-21, 1976.

Fork length (cm)	Set No.													
	1	2	4	6	8	9	10	11	12	14	15	17	18	19
23									1					
24											1			
25													1	
26						2	1	1						
27		1	1	2									1	
28	1			1		1								
29				1	1		1			1	1			
30				1	1		1	1						1
31					1		4	1			1		1	
32					1		4		1					
33							1							1
34					1		1							
35					2									
36							1							
37														
38							1							
39														
40														
41														
42														
43														
44							1							
45												2		
46													1	
47														
48														
49														
50														
51														
52												2		
53														
54														
55														
56													1	
Total	1	1	1	5	7	3	16	3	2	1	3	6	3	2

Appendix 2, Table 10 (cont'd)

Fork length (cm)	Set No.											Total
	27	29	30	32	33	34	35	36	38	39	40	
23				1								2
24												1
25												1
26					1						1	6
27	1					1						7
28		1	1		1			1	3		1	11
29									2			7
30		1					1					7
31		1	1						1			11
32												6
33									1			3
34									2			4
35									1	1	1	5
36												1
37									3			3
38									2			3
39				1								1
40												0
41		1										1
42									1			1
43												0
44									1			2
45									4	1		7
46												0
47												1
48												0
49												0
50												0
51												0
52												2
53												0
54												0
55												0
56												1
Total	1	4	2	2	2	1	1	1	21	2	3	94

[illegible]

Appendix 3, Table 1 (cont'd)

Species	Set no.														Total
	69	70	71	72	73	74	75	76	77	78	79	80			
River lamprey	-	-	-	-	1	-	-	-	-	-	-	-	22		
Pacific lamprey	-	-	-	-	-	-	-	-	-	-	-	-	-		
Chum salmon	-	33	45	295	-	126	~100	20	116	4	83	47	~3,506		
Chinook salmon	-	-	-	4	-	-	-	-	1	26	-	3	66		
Coho salmon	-	1	1	-	-	-	-	2	6	1	-	3	53		
Pink salmon	-	2	415	156	-	273	~9900	111	43	3	475	64	~26,421		
Sockeye salmon	-	3	4	5	-	12	-	16	47	-	5	-	292		
Spiny dogfish	-	-	-	-	-	1	1	1	-	1	-	-	58		
Pacific herring	-	5	3	6	7	14	-	-	-	1	-	1	-		
Pacific hake	-	-	-	-	-	-	-	-	-	-	-	-	1		
Walleye pollock	-	-	-	-	-	-	-	-	-	-	-	-	-		
Plainfin midshipman	-	-	-	-	-	-	-	-	-	-	-	-	-		
Threespine stickleback	-	-	-	-	-	-	~50	-	~100	16	1	-	~763		
Northern anchovy	-	-	-	-	-	-	-	-	-	-	-	-	3		
Pacific sand lance	-	-	-	-	-	-	-	-	-	-	-	-	5		
Lingcod	-	-	-	-	1	-	-	-	1	-	-	-	5		
Pacific cod	-	-	-	-	-	-	-	-	1	-	-	-	1		

Appendix 3, Table 2. Length frequency of river lamprey, June 21-26, 1976.

Total length (cm)	Set no.											Total
	48	50	51	55	60	61	63	64	65	67	73	
9.0				1								1
9.5							1					1
10.0												
10.5												
11.0					1		1	2				4
11.5												
12.0					1			2				3
12.5								1				1
13.0						2	1		1			4
13.5												
14.0												
14.5												
15.0								1				1
15.5			1							1		2
16.0		1										1
16.5				1								1
17.0	1											1
17.5												1
18.0			1								1	1
18.5												1
19.0												
19.5												
20.0												
Total	1	1	2	2	2	2	3	6	1	1	1	22

Appendix 3, Table 3. length frequency of herring, June 21-26, 1978.

Fork length (cm)	Set no.											
	42	43	44	45	46	48	49	50	51	52	53	54
3						] 20				] 3		
4												
5							1					
6												
7												
8					1							
9			1			1				1		
10			2	2		9		2		2		9
11			1	2		17	1	6		1		48
12					1	34		23				27
13				4		23	1	11		1		11
14				1	1	12		15	1		3	5
15	2					11	5	10	1		6	4
16		1		1		11	2	10	1			3
17	1			1		6	1	3	2		1	
18	1			1		12		1	1			
19		1				4	1	3				
20	1	1				6	1		1			
21						1						
22												
23												
24						2						
25									1			
26												
27												
28												
29												
30												
Total	5	3	4	12	3	169	13	84	8	8	10	107

Appendix 5, Table 3 (cont'd)

Fork length (cm)	Set no.											
	55	56	57	58	59	60	61	62	63	64	65	66
3												
4			1									
5			4		1							
6												
7												
8												
9	1			1								
10	7						1		1			
11	51		1	5	1		19	1		1		
12	35		12	19	1	3	31	2	4	17		
13	6		30	31		3	48	2	8	21	2	
14	2		24	15		7	36		8	7		
15	3		32	4		1	30		9	4		
16			11	1		4	11		25			
17			7			6	10		11			1
18						2	4		14		1	
19						5	12		5			
20						1			1			
21		1							1			
22		24										
23		49										
24		10							1			1
25		9							3			
26		2							1			
27		5										
28												
29		1										
30												
Total	105	101	122	76	3	32	202	5	92	50	3	2

Appendix 3, Table 3 (cont'd)

Fork length (cm)	Set no.								Total
	67	70	71	72	73	74	78	80	
3									23
4									1
5				1					7
6									0
7									0
8					1				2
9									5
10				1					36
11						3			158
12			1					1	211
13	4	2		1					209
14	5				1	4			147
15	2	3		1	1				129
16	2			1	2	1			87
17			1		1	4	1		57
18			1	1	1	2			42
19						2			33
20									12
21									3
22									24
23									51
24									15
25									11
26									2
27									5
28									0
29									1
30									0
Total	13	5	3	6	7	16	1	1	1271

Appendix 3, Table 4. Length frequency of spiny dogfish, June 21-26, 1976.

[illegible]

Appendix C, Table 4 (cont'd)

[illegible]

Appendix 3, Table 4 (cont'd)

Total length (cm)	Set no.														
	45			46			47			48			49		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
114															
115															
116															
117															
118															
119															
Total	1	1		12	1	13	3	1	4	2	3	5		3	3

Appendix 3, Table 4 (cont'd)

[illegible]

Appendix 3, Table 4 (cont'd)

[illegible]

Appendix 3, Table 4 (cont'd)

Total length (cm)	Set no.														
	53			54			56			68			74		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
114															
115															
116															
117															
118															
119															
Total	1		1		1	1		1	1	8	17	25		1	1

Appendix 3, Table 4 (cont'd)

[illegible]

Appendix 3, Table 4 (cont'd)

[illegible]

Appendix 3, Table 4 (cont'd)

Total length (cm)	Set no.											
	75			76			78			Total		
	M	F	T	M	F	T	M	F	T	M	F	T
114												
115												
116												
117												
118												
119												
Total	1	1		1	1		1	1		26	32	58

Appendix 3, Table 5. Length frequency of sockeye salmon, June 21-26, 1976.

Fork length (cm)	Set No.											
	42	44	46	50	51	53	54	57	58	60	61	63
9	1		1									1
10				17			1	2	2	5	2	13
11		1		27	5	1	1	5	2	6	1	5
12				7		1			4	1		
13				2	2			3				
14												
15												
16												
17												
18												
Total	1	1	1	53	7	2	2	10	8	12	3	19

Fork length (cm)	Set No.											Total
	64	65	67	68	70	71	72	74	76	77	79	
9	2							1				6
10	9	6	5		1	1		4	1	12		81
11	5	17	13	2	2	3	3	5	7	20	2	133
12	1	4	4	1				1	5	12	1	42
13		2	2						2	1	1	15
14							1	1		1	1	4
15		1					1					2
16										1		1
17												0
18									1			1
Total	17	30	24	3	3	4	5	12	16	47	5	285

Appendix 3, Table 6. Length frequency of pink salmon, June 21-26, 1976.

Fork length (cm)	Set No.											
	42	43	44	45	46	47	48	49	50	51	52	53
5												
6		1	5	3		1		7			1	
7	8	13	66	22	7	9	1	54	19	5	8	4
8	35	33	46	63	34	19	8	39	32	33	45	30
9	6	13	4	16	20	11	7		6	12	18	19
10			1		6	1				2	3	3
11												
12												
13							1					
Total	49	60	122	104	67	41	17	100	57	52	75	56

Fork length (cm)	Set No.											
	54	56	57	58	59	60	62	63	64	65	66	67
5												
6	1									1		
7	4	1	8	7	8	13	8		1	7		3
8	18	21	41	70	39	42	25	3	3	23	3	13
9	6	23	24	26	3	9	15	22	2	12	1	26
10	1	5	1	3		5	2	23		7		14
11								2				
12												
13												
Total	30	50	74	106	50	69	50	50	6	50	4	56

Fork length (cm)	Set No.										Total
	70	71	72	74	75	76	77	78	79	80	
5											0
6							3			7	30
7			8		1	3	12		13	46	359
8		19	41	1	29	18	5	2	28	8	869
9	2	31	8	24	20	24	14	1	9	2	436
10			1	24		10	8			1	121
11				3		1	1				7
12											0
13											1
Total	2	50	58	52	50	56	43	3	50	64	1823

Appendix 3, Table 7. Length frequency of chum salmon, June 21-26, 1976.

Fork length (cm)	Set No.												
	41	42	43	44	45	46	47	48	49	50	51	52	53
5				2	1				6	2			1
6				11	3	1	2		33	2	3	7	2
7	3	6	26	13	12	5	3		41	9	21	18	3
8	23	43	64	11	6	11	11	1	2	11	16	16	14
9	34	29	37	21	7	18	15	5	1	8	6	13	24
10	33	22	20	13	2	12	11	15	1	13	1	3	5
11	9	16	8	5		6	8	3		8			1
12	6	6	2	1			2	2		1			
13		3	1					1					
14							1						
15													
Total	108	125	158	77	31	53	53	27	84	54	47	57	50

Fork length (cm)	Set No.												
	54	56	57	58	59	60	62	63	64	65	66	67	68
5											1		
6	1		1							6			
7	6	1	8	1	7		1	2		17			
8	16	15	25	9	12	4	3			16		7	1
9	1	23	14	7	4	2	5	8		7		23	3
10	5	10	6	5		8	2	8	1	2		3	4
11	4	1	1			6		5					1
12						2		2				2	
13								2		1		2	
14													
15													
Total	33	50	55	22	23	22	11	27	1	49	1	37	9

Appendix 3, Table 7 (cont'd)

Fork length (cm)	Set No.										Total
	70	71	72	74	75	76	77	78	79	80	
5											0
6			2						4	15	36
7	1		3		1	1			22	23	182
8	15	9	25		2	1		3	24	6	441
9	12	21	18	8	2	3	4		24	2	381
10	5	7	2	15		4	9	1	7	1	322
11		3		20	1	5	24				188
12		1		6		2	10		2		71
13		3		2		2	3				25
14		1				2					6
15											1
Total	33	45	50	51	6	20	50	4	83	47	1653

Appendix 3, Table 8. Length frequency of coho salmon, June 21-26, 1976.

Fork length (cm)	Set No.										
	41	42	43	44	45	46	47	49	51	58	
13											
14			1		1					1	
15	1	3									
16	1	1	1	1	1		1				
17	2	1		1		2		1			
18								1			1
19									1		
20			1		1	1					1
21					1						
Total	4	5	3	2	4	3	1	2	2	2	2

Fork length (cm)	Set No.									Total
	63	65	67	70	71	76	77	78	80	
13										1
14							1			3
15	1	2							1	8
16						1	1			9
17	1		1		1			1		11
18							2			5
19	1						2			5
20						1			2	5
21				1						2
Total	3	2	1	1	1	2	6	1	3	50

Appendix 3, Table 9. Length frequency of chinook salmon, June 21-26, 1976.

Fork length (cm)	Set No.											
	41	44	45	46	48	49	50	51	52	54	56	57
7												
8												
9					2	1		1		1	1	2
10						1						
11												
12												
13												
14												
15												
16								1				
17							1					
18												
19												
20								1				
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31	1											
32	1											
33												
34	1								2	1		
35	3								1			
36			1	1								
37			1									
38												
39												
40	1	1										
41												
42												
43												
44												
45												
Total	7	1	2	1	2	2	1	3	3	2	1	2

Appendix 3, Table 9 (cont'd)

Fork length (cm)	Set No.							TOTAL
	59	62	64	72	77	78	80	
7				1				1
8	1			2		1		2
9				1				2
10								0
11					1			1
12								0
13						3	1	4
14						4		4
15						4	1	6
16						4		5
17						4	1	5
18						4		4
19						2		3
20		1						1
21								0
22								0
23								0
24								0
25								0
26								0
27								0
28								0
29								0
30								1
31								3
32			1					2
33								2
34								5
35								1
36								0
37								1
38	1							0
39								0
40								2
41								0
42								0
43	1							1
44								0
45								0
Total	3	1	1	4	1	26	3	66

Appendix 4, Table 1 (cont'd)

Species	Set no.													Total
	95	96	97	98	99	100	101	102	103	104	105	106	107	
River lamprey	5	-	5	3	3	-	1	8	1	1	1	1	-	46
Pacific lamprey	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chum salmon	48	3	234	-	86	-	52	-	14	27	8	54	51	1907
Chinook salmon	-	-	1	-	-	-	2	-	-	1	-	-	1	56
Coho salmon	3	-	1	1	2	-	-	-	1	-	1	-	-	160
Pink salmon	21	6	41	-	5	-	15	1	6	-	-	5	3	199
Sockeye salmon	-	3	7	-	-	-	15	1	8	2	1	-	-	38
Spiny dogfish	-	-	-	-	-	-	-	-	-	2	2	-	-	39
Pacific herring	-	-	-	-	1	182 ^a	1	-	-	~300	~600	~200	~300	580
Pacific hake	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Walleye pollock	-	-	-	-	-	-	-	-	-	-	-	1	1	-
Plainfin midshipmen	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Threespine stickleback	-	-	-	-	-	-	-	-	-	-	-	-	-	25
Northern anchovy	-	-	-	-	-	-	-	-	-	1	-	-	1	5
Pacific sand lance	-	-	-	1	-	-	-	-	-	-	1	-	-	2
Starry flounder	-	-	-	-	-	-	1	-	-	-	-	-	-	1

^aweight/kg.

Appendix 4, Table 2. Length frequency of hake, July 5-9, 1976.

Fork length (cm)	Set no.								Total
	84	85	86	87	91	92	93	94	
15									
16							3		3
17		1				1	5		7
18							7		7
19			3			3	17		23
20			7			2	7		16
21			15				17		32
22			18	1			11		30
23			17				7		24
24			6				2		8
25	1		3				3		7
26			4				1		5
27	1		1		1		1		4
28	1		3	1	1		2		8
29	2	2	6	1	12				23
30	5	5	4		14		3		31
31		4	4	2	25		1	1	37
32		5	2	1	53		2	1	64
33	1	4	3	2	45			3	58
34	1	5	2	2	38		1	3	52
35				2	39			3	44
36		4		1	17			6	28
37				2	7		1	3	13
38					7			3	10
39					4				4
40				1	1				2
41				1	1			1	3
42				1	3				4
43					2			1	3
44					7				7
45		1			2				3
46					8			1	9
47					2				2
48					2				2
49					2				2
50									-
51					2				2
52					1				1
53					1				1
-									
-									
57					1				1
Total	12	31	98	18	298	6	91	26	580

Appendix 4, Table 3. Length frequency of river lamprey, July 5-9, 1976.

Total length (cm)	Set no.									
	81	82	83	84	85	86	88	89	91	95
11.0										
11.5										
12.0										1
12.5										2
13.0	1					1				1
13.5										
14.0				1						
14.5		1								
15.0	1								1	1
15.5										
16.0										
16.5		1								
17.0			1							
17.5		1						1		
18.0										
18.5										
19.0				1						
19.5		1								
20.0		1			1					
20.5										
21.0				1						
21.5							1			
22.0										
22.5										
23.0										
23.5										
24.0										
24.5										
25.0										
25.5										
26.0										
26.5										
27.0										
27.5					1					
Total	2	5	1	3	2	1	1	1	1	5

Appendix 4, Table 3 (cont'd)

Total length (cm)	Set no.								Total
	97	98	99	101	102	103	104	105	
11.0									
11.5									1
12.0					1				3
12.5					1				2
13.0					2				4
13.5		1						1	2
14.0	1		1						3
14.5					1				2
15.0							1		4
15.5	2				1	1			4
16.0									1
16.5	1							1	2
17.0									1
17.5			1						3
18.0		1							1
18.5									-
19.0			1						2
19.5									1
20.0									2
20.5	1			1					2
21.0									2
21.5									-
22.0									-
22.5									-
23.0					2				2
23.5									-
24.0									-
24.5									-
25.0									-
25.5		1							1
26.0									-
26.5									-
27.0									-
27.5									1
Total	5	3	3	1	8	1	1	1	46

Appendix 4, Table 4. Length frequency of herring, July 5-9, 1976.

Fork length (cm)	Set no.				Total
	86	99	101	104	
5					
6					
7					
8					
9					
10				1	1
11				1	1
12	1		1	7	9
13	1			14	15
14				19	19
15				4	4
16	1	1		4	6
17	1			1	2
18	4				4
19	1				1
20					
21	1				1
22	1				1
23	1				1
24	1				1
25					
26	1				1
27					
28	1				1
29					
30					
Total	15	1	1	51	68

Appendix 4, Table 5. Length frequency of dogfish, July 5-9, 1976.

Total length (cm)	Set no.														
	84			86			87			90			93		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
60															
61															
62															
63															
64															
65															
66															
67															
68															
69															
70															
71															
72															
73															
74															
75															
76															
77															
78		1	1												
79															
80															
81															
82												1			1
83															
84												1			1
85												1	2		3
86					2	2									
87															
88							1		1						
89															
90							1		1						
91															
92				1		1									
93															
94													1		1
95												1			1
96													2		2
97															
98													1		1
99								1	1		1	1			

Appendix 4, Table 5 (cont'd)

Total length (cm)	Set no.														
	84			86			87			90			93		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	:
100							1	1					1	1	
101													2	2	
102															
103															
104															
105															
106													1	1	
107															
108													1	1	
109															
110															
111													1	1	
112													1	1	
113										1	1				
114															
115															
Total	0	1	1	1	2	3	2	2	4	0	2	2	4	13	17

[illegible][illegible]

Appendix 4, Table 5 (cont'd)

Total length (cm)	Set no.											
	94			104			105			Total		
	M	F	T	M	F	T	M	F	T	M	F	T
100										2		2
101										2		2
102												
103		1	1							1		1
104												
105												
106		1	1							2		2
107												
108										1		1
109		1	1							1		1
110												
111										1		1
112										1		1
113										1		1
114												
115												
Total	4	4	8	1	1	2	2	0	2	14	25	39

Appendix 4, Table 6. Length frequency of sockeye salmon, July 5-9, 1976.

Fork length (cm)	Set No.								Total
	82	96	97	101	102	103	104	105	
5									0
6									0
7									0
8									0
9									0
10				3		1			4
11			3	2		4	1		10
12		2	2	7	1	3	1	1	17
13		1	2	1					4
14	1								1
15				1					1
16				1					1
Total	1	3	7	15	1	8	2	1	38

Appendix 4, Table 7. Length frequency of pink salmon, July 5-9, 1976.

Fork length (cm)	Set No.								
	81	82	83	84	88	90	91	95	96
5									
6									
7			1			6			
8	3	1	2	6	1	4	1	8	2
9			5	5	2	1	3	12	3
10							3	1	1
11			1	1					
12									
Total	3	1	9	12	3	11	7	21	6

Fork length (cm)	Set No.						
	99	101	102	103	106	107	
5							
6							
7							
8	2	7			2	1	
9	1	5		6	3	1	
10	1	3	1			1	
11	1						
12							
Total	5	15	1	6	5	3	

Appendix 4, Table 8. Length frequency of chum salmon, July 5-9, 1976.

Fork length (=)	Set No.										
	81	82	83	84	86	87	88	90	91	94	95
7											
8	2	1		6	10		1	8		2	5
9	1	1		13	24	6	11	12	5	2	11
10	1		7	21	46	8	20	18	14	5	18
11			14	8	28	12	7	8	4	6	8
12			16	2	14	3	2	1	3	5	4
13			8		5			2	1	2	1
14			5		1			1			1
15					1					1	
Total	4	2	50	50	129	29	41	50	27	23	48

Fork length (=)	Set No.									Total
	96	97	99	101	103	104	105	106	107	
7										0
8		2	2		1			3	3	46
9		11	11	10	3	10	1	8	10	157
10	1	20	23	17	3	8	2	21	15	275
11	2	14	26	14	4	6	3	14	20	200
12		5	11	7	1	3	2	6	8	85
13		3	13	4	1			2		39
14					1					4
15										2
Total	3	55	86	52	14	27	8	54	56	808

Appendix 4, Table 3. Length frequency of coho salmon, July 5-9, 1976.

Fork length (cm)	Set no.						
	81	84	88	89	91	94	95
10							
11							
12							
13							
14							
15							
16							
17							
18		2				1	1
19		2					
20	1	8	1				2
21		3	1				
22		4		2			
23							
24		1					
25		1					
26		1					
27					1		
28					1		
29					4		
30					13		
31					9		
					6		
					4		
Total	1	22	2		38	1	3

Appendix 4, Table 9 (cont'd)

Fork length (cm)	Set no.				Total
	98	99	103	105	
10					
11					
12					
13					
14					
15					
16	1	1		1	6
17					2
18			1		5
19					5
20					10
21		1			6
22					5
23					
24					1
25					1
26					2
27					1
28					4
29					13
30					9
31					6
					4
Total	1	2	1	1	75

Appendix 4, Table 10. Length frequency of chinook salmon, July 5-9, 1976.

Fork length (cm)	Set No.								
	81	82	83	84	85	86	87	89	90
15									
16									
17		2							
18	1	4		3				1	1
19	1	1		3					
20		2		3					1
21		2	1				1		
22				1					
23				1					
24									
25									
26				1					
27						1			
28									
29									
30									
31									
32									
33	1				3				
34	2								
35	1				1				
36					1				
37									
38				1					
Total	6	11	1	13	5	1	1	1	2

Appendix 4, Table 10 (cont'd)

Fork length (cm)	Set No.						Total
	91	93	97	101	104	107	
15			1			1	2
16							0
17	1			1			4
18							10
19				1			6
20							6
21							4
22					1		2
23							1
24							0
25							0
26							1
27							1
28							0
29							0
30							0
31							0
32	1						1
33	2						6
34	1						3
35	2						4
36							1
37	2						2
38		1					2
Total	9	1	1	2	1	1	56

Appendix 5, Table 1. Species and numbers captured, August 3-10, 1976.

[illegible]

Appendix 5, Table 1 (cont'd)

[illegible]

Appendix 5, Table 1 (cont'd)

Species	Set no.					Total
	150	151	158	159		
River lamprey	-	1	1	-	-	40
Pacific lamprey	-	-	-	-	-	-
Chum salmon	3	-	3	-	-	142
Chinook salmon	11	6	8	6	-	105
Coho salmon	4	-	1	1	-	251
Pink salmon	2	-	10	-	-	555
Sockeye salmon	-	-	2	-	-	2
Spiny dogfish	-	-	-	-	-	36
Pacific herring	-	-	-	-	-	-
Pacific hake	-	-	-	-	-	189
Walleye pollock	-	-	-	-	-	109
Plainfin midshipmen	-	-	-	-	-	70
Threespine stickleback	-	-	-	-	-	557
Northern anchovy	-	-	-	-	-	160
Pacific sand lance	-	-	-	-	-	1
Lingcod	-	-	-	-	-	1
Pile perch	-	-	-	-	-	1
Shiner perch	1	-	-	-	-	1

* weight/kg

Appendix 5, Table 2. Length frequency of river lamprey, August 3-10, 1976.

Total length (cm)	Set no.										
	110	113	114	115	117	121	125	127	129	131	135
19.0											
19.5					1						
20.0											
20.5		1									
21.0						2	1				
21.5							1				
22.0			1								
22.5											
23.0	1									2	
23.5					1						
24.0						1	1				1
24.5				1							
25.0							2		1		
25.5				1							1
26.0								1	1		
26.5											
27.0											
27.5											
28.0						1					
Total	1	1	1	2	2	4	5	1	2	2	2

Appendix 5, Table 2 (cont'd)

Total length (cm)	Set no.									Total
	138	139	140	142	144	145	146	151	158	
19.0			1							1
19.5										1
20.0		1								1
20.5		1								1
21.0		1								2
21.5	1									4
22.0		1	1	1		1				2
22.5							1			5
23.0										1
23.5		1			1					4
24.0	2									2
24.5										5
25.0								1	1	3
25.5										3
26.0										2
26.5										2
27.0										1
27.5	1									1
28.0										
Total	4	5	2	1	1	1	1	1	1	40

Appendix 5, Table 3. Length frequency of hake, August 3-10, 1976.

Fork length (cm)	Set no.				Total
	110*	111	112	113	
18	1	1			2
19		1			1
20					
21					
22			2		2
23	1		9		10
24			7		7
25			10		10
26			9	2	11
27			3		3
28			2		2
29			4	2	6
30			7	3	10
31	1		6	7	14
32	1		12	8	21
33			13	9	22
34	2		6	12	20
35	3		7	9	19
36	1		2	10	13
37				1	1
38				1	1
39					
40					
41					
42				1	1
43	1				1
44	1		1		3
45	1	1	1	1	3
46			1		1
47	1				1
48					
49					
50		1			1
Total	17	4	102	66	189

*2 fish - 3 cm

1 fish - 4 cm

Appendix 5, Table 4. Length frequency of pollock, August 3-10, 1976.

Fork length (cm)	Set no.					Total
	110	111	113	130	131	
1						
2						
3						
4						
5	4				1	5
6	14	6			1	21
7	26	25	1			52
8	11	14				25
9	2	3		1		6
10						
Total	57	48	1	1	2	109

Appendix 5, Table 5. Length frequency of dogfish, August 3-10, 1976.

[illegible]

Appendix 5, Table 5 (cont'd)

Total length (cm)	Set no.											
	110			112			113			120		
	M	F	T	M	F	T	M	F	T	M	F	T
70												
71												
72												
73												
74												
75												
76												
77												
78												
79												
80												
81												
82								1	1			
83								1	1			
84												
85												
86												
87								1	1			
88												
89												
90		1	1									
91												
92												
93												
94												
95					1	1						
96												
97											1	1
98												
99								1	1			
100												
101												
102								1	1			
103												
104												
105								1	1			
106												
107												
108								1	1			
								1	1			
Total	0	1	1	0	1	1	2	6	8	15	5	20

Appendix 5, Table 5 (cont'd)

[illegible]

Appendix 5, Table 5 (cont'd)

Total length (cm)	Set no.								
	129			132			Total		
	M	F	T	M	F	T	M	F	T
70									
71									
72									
73									
74									
75									
76									
77									
78									
79									
80									
81									
82							1	1	1
83							1		1
84									
85									
86									
87							1		1
88									
89									
90									
91							1	1	
92									
93									
94									
95									
96							1	1	
97							1	1	
98									
99							1	1	
100									
101									
102							1	1	
103									
104									
105							1	1	
106									
107									
108							1	1	
							1	1	
Total	1	0	1	2	2	4	20	16	36

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Appendix 5, Table 6. Length frequency of sockeye salmon, August 3-10, 1976.

Fork length (cm)	Set no.				Total
	153	154	155	156	
6	1		1		2
7			2	1	3
8					
9		1			1
10					
11					
12					
13					
14	1				1
15					
16					
17					
18					
19					
Total	2	1	3	1	7

Appendix 5, Table 7. Length frequency of pink salmon, August 3-10, 1976.

Fork length (cm)	Set no.								
	110	111	112	114	115	116	117	118	123
7									
8	1								
9	4	1		2		2			
10	23	12		9	26	1	2	4	
11	37	24		26	44		6		
12	19	18	2	11	16				
13	2	2		2	1		2		7
14	1	3							11
15									3
16							2		1
17									
18									
19									
Total	87	60	2	50	87	3	12	4	22

Appendix 5, Table 7 (cont'd)

Fork length (cm)	Set no.								
	125	127	128	131	134	135	136	137	138
7									
8	1								
9								1	
10	10		1	6				2	
11	25	2		10	4	1	1		
12	16		2	4	15			2	1
13			1	2	5				
14					1				
15									
16									
17									
18									
19									
Total	52	2	4	22	25	1	1	5	1

Appendix 5, Table 7 (cont'd)

Fork length (cm)	Set no.						Total
	141	145	146	147	150	155	
7							
8							
9		3	1				3
10		4	12				14
11		9	12	1			112
12	1		6	4	2	1	202
13		2	5	2		1	128
14			1	1			38
15							10
16							3
17							
18							
19							
Total	1	18	38	8	2	2	510

Appendix 5, Table 3. Length frequency of chum salmon, August 3-10, 1976.

Fork length (cm)	Set no.											
	108	110	111	113	114	115	116	117	118	121	123	125
7												
8							1					
9		2	3			1	4		1			
10	1	8	5		3	7	2	2				5
11		3	4	2	2			2				3
12		4	2		10			2			1	4
13			3		3			1			1	
14			1		2					1		1
15												
16			1									
17												
18												
19												
20												
21	1											
21												
22												
Total	2	17	19	2	20	8	7	7	1	1	2	13

Appendix 5, Table 8 (cont'd)

Fork length (cm)	Set no.											Total
	128	131	132	134	135	137	141	144	145	146	147	
7												
8												
9						1			1			1
10	1	3				1			1			13
11		3				3	1	1				39
12		2		3	1	3	2		1	1	1	26
13		1	1			3			1		2	37
14				1		2				1		13
15									1	1		8
16												
17												1
18												
19												
20												
21												
22												1
Total	1	9	1	4	1	10	3	1	4	3	3	139

Appendix 5, Table 9. Length frequency of coho salmon, August 3-10, 1976.

Fork length (cm)	Set no.										
	108	109	110	111	112	113	114	115	118	119	120 121
9											
10	2	2									
11	2	4									
12	2										
13	1										
14											
15											1 2
16											
17											1
18				1							
19				3			1	1	1		4 1
20	1			1				1	1		6 2
21	2		2	1			1	1			4 4
22	1	2	5	3	1	3	1			1	4
23			1	1				2			1 1
24	2			1			1	1			
25	1			1							
26											
27											
28	1										
29											
30											
31											
32											
33											
34											
Total	15	8	8	12	1	3	4	6	2	1	21 10

Appendix 5, Table 2 (cont'd)

Fork length (cm)	Set no.											
	122	123	124	125	126	127	128	129	130	131	133	134
9												
10												
11												
12												
13												
14												
15												
16					1							
17					2						1	
18					1		1					
19		1	1	1			1					
20	1	1			5		3	1			1	
21		4			5			1		1	1	1
22		6	1		5		1	1	1			3
23	1	1			2	1		1	2		2	1
24	2	1		1	2		1	1				
25					2							
26	1								1			
27							1		2		1	
28												
29												
30												
31												
32												
33												
34												
Total	5	14	2	2	25	1	8	5	6	1	6	5

Appendix 5, Table 9 (cont'd)

Fork length (cm)	Set no.													Total
	135	136	137	138	139	140	141	142	143	145	146	147	150	
9														4
10														6
11														2
12					1									2
13														3
14														2
15														4
16													1	4
17					1									4
18						2	1					2		20
19				2		2	2					1	3	34
20			4	1		3	4							40
21	1			2	1	2	3	1		1				50
22		1		1		1	2	1			1	1		25
23	1	2	2	1		3	4	1						27
24	1	1		1			3	1						11
25	1						1							4
26								1						5
27														1
28														1
29							1							1
30	1													1
31					1									1
32									1					1
33							1							1
34														
Total	5	4	6	8	4	13	23	4	1	1	1	4	4	249

Appendix 5, Table 10. Length frequency of chinook salmon, August 3-10, 1976.

Fork length (cm)	Set no.							
	108	109	110	111	115	117	118	120
9								
10	1			1				2
11								3
12					1			
13								
14								
15								2
16								1
17								2
18						1		2
19								1
20								
21								
22								
23								
24	1							1
25							1	
26								
27								
28								
29								
30								
31								
32								
33								
34	1							2
35								
36								
37								
38								1
39								
40								
41		1						
42								
43								
44			1					
45		1						
-								
-								
87								1
Total	3	2	1	1	1	1	1	14
								7

Appendix 5, Table 10 (cont'd)

Fork length (cm)	Set no.							
	125	128	131	133	138	140	141	143
9		1						1
10								1
11								
12	1							
13		1				1		1
14								
15								1
16								
17			1					
18								1
19								1
20					1		1	
21		1						1
22							1	
23								
24					1			
25								
26								
27								
28								
29								
30								
31								
32								1
33								
34								
35								
36								1
37								
38								
39				1				
40								
41								1
42								
43								
44								
45								
-								
-								
87								
Total	1	3	1	1	2	1	2	1

Appendix 5, Table 10 (cont'd)

Fork length (cm)	Set no.						Total
	146	147	148	149	150	151	
9	1		2				5
10			2				9
11			3			2	10
12			1		3	1	6
13					3		4
14		1	3		1		8
15						2	3
16			4			1	5
17					1		6
18							4
19					1		2
20							3
21		1	1		1		5
22	1						2
23					1		1
24							3
25							1
26							0
27							0
28							0
29							0
30							0
31							0
32							1
33							0
34							3
35							0
36							1
37							0
38							1
39							1
40							1
41				1			1
42				1			3
43							0
44							0
45							1
-							1
-							0
87							0
Total	2	2	16	2	11	6	91

Appendix 6, Table 1. Species and numbers captured, August 24-September 2, 1976.

Species	Set no.																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
River lamprey	1	1	-	1	3	1	1	1	2	1	1	-	-	-	11	5	-
Pacific lamprey	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chum salmon	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chinook salmon	4	-	3	8	6	16	2	9	7	-	1	3	7	-	5	28	-
Coho salmon	4	2	2	-	1	-	3	1	3	4	4	1	3	19	-	8	-
Pink salmon	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sockeye salmon	2	-	2	-	1	-	3	1	14	8	-	-	1	-	-	2	-
Spiny dogfish	-	1	-	-	2	-	-	5	5	23	3	1	3	33	-	-	1
Pacific herring	-	-	9	-	-	-	1	-	2	-	5	-	-	-	3	1	-
Threespine stickleback	-	-	1	-	50	-	12	-	-	20	-	-	-	-	60	-	-
Northern anchovy ¹	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pacific sand lance	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bay pipefish	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-

¹ Larval.

Appendix 6, Table 1 (cont'd)

[illegible]

Appendix 6, Table 1 (cont'd)

Species	Set no.		Total
	50		
River lamprey	-		59
Pacific lamprey	-		-
Chum salmon	-		-
Chinook salmon	-		187
Coho salmon	3		230
Pink salmon	-		-
Sockeye salmon	3		131
Spiny dogfish	-		585
Pacific herring	-		23
Threespine stickleback	-		260
Northern anchovy	-		53
Pacific sand lance	-		1
Bay pipefish	-		3

Appendix 6, Table 2. Length frequency of river lamprey, August 24-September 2, 1976 (North Strait).

Total length (cm)	Set no.															
	1	2	4	5	6	7	8	9	10	11	15	16	32	33	34	35
19.0					1											
19.5		1									1			1		
20.0											1					
20.5											2			2		
21.0				3				1		1	1			3		
21.5											1				1	
22.0													1			
22.5								1			1	1				1
23.0									1		3	1				
23.5	1		1								1	1				
24.0																
24.5															1	
25.0						1						2		1		
25.5																
26.0																
26.5								1								
27.0																
27.5																
28.0																
Total	1	1	1	3	1	1	1	2	1	1	11	5	1	8	1	1

Appendix 6, Table 2 (cont'd)

Total length (cm)	Set no.								Total
	36	39	40	41	45	47	48	49	
19.0									1
19.5									3
20.0			1						2
20.5		1							5
21.0		1	1						11
21.5		1							3
22.0	2	1							5
22.5								1	5
23.0			1				1		6
23.5		1				1			6
24.0								1	1
24.5									1
25.0									4
25.5		1						1	2
26.0				1					1
26.5									1
27.0					1				1
27.5									
28.0	1								1
Total	3	6	3	1	1	1	1	3	59

Appendix 6, Table 3. Length frequency of spiny dogfish, August 24 - September 2, 1976.

[illegible]

Appendix 6, Table 3 (cont'd)

Total length (cm)	Set No.														
	2			5			8			9			10		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
66															
67															
68															
69															
70															
71															
72															
73															
74															
75															
76															
77															
78															
79															
80															
81															
82															
83															
84															
85															
86															
87															
88															
89				-	1	1									
90															
91															
92															
93															
94															
95															
96															
97															
98															
99															
100															
101															
102															
103															
104															
105															
106															
107															
108							-	1	1						
109										-	1	1			
110															
111															
112															

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Appendix 6, Table 3 (cont'd)

Total length (cm)	Set No.														
	2			5			8			9			10		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
113															
114															
115															
116															
117															
118															
119															
120															
Total	1	0	1	0	2	2	1	4	5	3	2	5	9	14	23

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Appendix 6, Table 3 (cont'd)

[illegible]

Appendix 6, Table 3 (cont'd)

Total length (cm)	11			12			13			14			17		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
113															
114															
115															
116															
117															
118															
119															
120															
Total	1	2	3	1	0	1	0	3	3	20	13	33	0	1	1

Append

Total
length
(cm)

20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
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81
82
83
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92
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Appendix 6, Table 3 (cont'd)

[illegible]

Appendix 6, Table 3 (cont'd)

Total length (cm)	Set No.														
	18			19			20			25			26		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
66															
67															
68															
69															
70															
71															
72															
73															
74															
75															
76															
77															
78															
79															
80													1	-	1
81															
82													1	-	1
83	1	-	1												
84															
85															
86															
87															
88										-	1	1			
89															
90															
91										-	1	1			
92															
93															
94										-	2	2			
95										-	1	1			
96															
97															
98										-	2	2			
99															
100										-	4	4			
101										-	1	1			
102															
103															
104															
105															
106															
107															
108															
109															
110															
111															
112															

Appendix

Total
length
(cm)

113
114
115
116
117
118
119
120

Total

Appendix 6, Table 3 (cont'd)

Total length (cm)	Set No.														
	18			19			20			25			26		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
113															
114															
115															
116										-	1	1			
117															
118															
119															
120															
Total	56	71	127	4	6	10	3	2	5	0	13	13	10	2	12

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Appendix 6, Table 3 (cont'd)

[illegible]

Appendix 6, Table 3 (cont'd)

Total length (cm)	Set No.														
	27			30			35			36			40		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
113															
114															
115															
116															
117															
118															
119															
120															
Total	11	9	20	13	11	24	46	70	116	2	1	3	0	1	1

Appendix 6, Table 3 (cont'd)

[illegible]

Appendix 6, table 3 (cont'd)

[illegible]

Appendix 6, Table 5 (cont'd)

Total length (cm)	Set no.														
	41			42			44			45			47		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
109															
110					1	1									
111															
112															
113															
114															
115															
116															
117															
118															
119															
Total	5	5	10	0	15	15	3	8	11	1	0	1	32	40	72

Appendix 6, Table 3 (cont'd)

Total length (cm)	Set no.					
	49			Total		
	M	F	T	M	F	T
20						
21						
22					1	1
23						
24						
25						
26						
27						
28						
29				2	1	3
30				1	2	3
31				2	1	3
32				1	4	5
33				2	2	4
34				4	3	7
35				5	6	11
36				8	14	22
37				14	9	23
38				19	14	33
39				10	24	34
40		1	1	17	18	35
41				21	18	39
42		1	1	13	27	40
43		1	1	20	19	39
44	2		2	18	17	35
45	1		1	17	15	32
46				16	18	34
47				7	20	27
48	1	1	2	9	7	16
49				5	7	12
50				1	9	10
51				4	5	9
52				1	1	2
53				2	2	4
54				1		1
55				1	1	2
56						
57				1		1
58	1		1	1		1
59						
60						
61						
62						
63						
64						

Appendix 5, Table 3 (cont'd)

Total length (cm)	Set no.					
	49			Total		
	M	F	T	M	F	T
65						
66						
67						
68						
69						
70						
71						
72						
73						
74					1	1
75						
76						
77	1		1	2		2
78						
79						
80				1		1
81						
82				1		1
83				1		1
84						
85						
86						
87						
88					1	1
89					1	1
90						
91					1	1
92						
93					1	1
94					2	2
95					2	2
96						
97					2	2
98					3	3
99						
100					5	5
101					2	2
102					1	1
103					2	2
104					2	2
105					1	1
106					1	1
107					1	1
108					2	2

Appendix 6, Table 3 (cont'd)

Total length (cm)	Set no.					
	49			Total		
	M	F	T	M	F	T
109					1	1
110					1	1
111						
112						
113						
114						
115						
116					1	1
117						
118						
119						
Total	6	4	10	228	299	527

Appendix 7, Table 1. Species and numbers captured, September 8-17, 1976.

Species	Set no.													
	160	161	162	163	164	165	166	167	168	169	170	171	172	173
River lamprey	-	1	-	-	1	1	4	-	1	-	-	1	1	1
Pacific lamprey	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chum salmon	-	2	-	1	1	3	2	-	-	-	-	-	1	-
Chinook salmon	15	10	5	9	1	2	4	1	4	20	-	5	1	2
Coho salmon	4	2	-	1	1	-	1	2	2	9	1	4	1	1
Pink salmon	3	4	2	14	24	14	19	2	-	2	-	-	-	-
Sockeye salmon	-	-	-	-	-	-	-	-	-	-	-	-	1	-
Spiny dogfish	23	1	-	3	-	-	-	-	92	31	5	-	-	-
Pacific herring	227 ^a	318 ^a	273 ^a	227 ^a	-	4	238	-	30	1364 ^a	-	-	-	-
Pacific hake	6	2	1	4	-	-	-	-	-	-	-	-	-	-
Walleye pollock	-	4	150	-	-	-	-	-	-	-	-	-	-	-
Plainfin midshipmen	-	-	-	10	-	-	-	-	-	-	-	-	-	-
Threespine stickleback	-	-	-	-	~2000	-	-	-	~2000	-	-	-	-	-

Appendix 7, Table 1 (cont'd)

Species	Set no.														
	174	175	176	177	178	179	180	181	182	183	184	185	186	187	
River lamprey	2	-	-	1	-	-	-	-	-	-	-	-	-	-	
Pacific lamprey	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Chum salmon	-	1	-	-	1	1	39	-	-	4	-	-	-	-	
Chinook salmon	2	4	1	4	-	1	2	-	-	1	-	-	-	1	
Coho salmon	-	1	-	-	3	-	2	-	2	3	-	1	-	6	
Pink salmon	-	9	2	1	6	17	509	15	1	183	9	1	31	2	
Sockeye salmon	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Spiny dogfish	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Pacific herring	-	7	32	-	125	-	~1000	-	-	-	-	-	-	-	
Pacific hake	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Walleye pollock	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Plainfin midshipman	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Threespine stickleback	-	9	-	-	-	50	-	-	36	-	-	-	-	-	

Appendix 7, Table 1 (cont'd)

Species	Set no.														Totals
	188	189	190	191	192	193	194	195	196	197	198	199			
River lamprey	2	1	-	-	-	-	-	-	-	-	-	-	-	17	
Pacific lamprey	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Chum salmon	-	-	-	-	-	-	-	-	-	-	-	-	2	58	
Chinook salmon	~8	-	-	2	8	2	-	1	2	-	1	2	2	121	
Coho salmon	~200	13	10	1	1	1	2	-	3	-	2	1	1	281	
Pink salmon	~200	-	1	-	-	-	-	-	-	-	4	7	7	1082	
Sockeye salmon	-	-	-	-	-	-	-	-	-	-	-	-	-	1	
Spiny dogfish	-	3	-	-	-	-	-	-	-	-	-	-	-	158	
Pacific herring	-	-	-	-	45*	-	-	-	-	-	-	-	-	-	
Pacific hake	-	-	-	-	-	-	-	-	-	-	-	-	-	13	
Walleye pollock	1	1	-	-	-	-	-	-	-	-	-	-	-	156	
Plainfin midshipmen	-	-	-	-	-	-	-	-	-	-	-	-	-	10	
Threespine stickleback	-	-	12	-	-	-	-	-	40	10	28	-	-	4185	

* weight/kg

Appendix 7, Table 2. Length frequency of river lamprey, September 8-17, 1976.

Total length (cm)	Set no.					
	161	164	165	166	168	171 172
22.0						
22.5						
23.0						
23.5						
24.0						
24.5	1			2		1
25.0						1
25.5						
26.0				2	1	
26.5						
27.0		1	1			
27.5						
28.0						
28.5						
Total	1	1	1	4	1	1

Appendix 7, Table 2 (cont'd)

Total length (cm)	Set no.					Total
	173	174	177	188	189	
22.0						
22.5						1
23.0			1			
23.5				1	1	5
24.0				1		3
24.5						
25.0						1
25.5		1				4
26.0	1					
26.5						2
27.0						
27.5						
28.0						1
28.5		1				
Total	1	2	1	2	1	17

Appendix 7, Table 3. Length frequency of spiny dogfish, September 8-15, 1976.

[illegible]

Appendix 7, Table 3 (cont'd)

[illegible]

Appendix 7, Table 3 (cont'd)

Total length (cm)	Set no.														
	160			161			163			168			169		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
114														2	2
115															
116															
117															
118															
119															
Total	2	3	19	1	0	1	1	2	3	65	27	92	0	31	31

Appendix 7, Table 3 (cont'd)

[illegible]

Appendix 7, table 3 (cont'd)

[illegible]

Appendix 7, Table 3 (cont'd)

Total length (cm)	Set no.						Total		
	170			189					
	M	F	T	M	F	T	M	F	T
114							2	2	
115									
116									
117									
118									
119									
Total	0	5	5	0	3	3	69	71	154*

*Includes 14 unsexed.

Appendix 7, Table 4. Length frequency of pink salmon, September 8-15, 1976.

Fork length (cm)	Set no.								
	160	161	162	163	164	165	166	167	169
11					2	1			
12					3	2	1	1	
13	1		1	3	11	8	12	1	
14		3		5	7	3	6		1
15	1	1	1	4	1				1
16	1			2					
17									
18									
19									
20									
21									
Total	3	4	2	14	24	14	19	2	2

Appendix 7, Table 4 (cont'd)

Fork length (cm)	Set no.								
	175	176	177	178	179	180	181	182	183
11			1						
12		1			1				1
13	4			1		6		1	2
14	2	1			6	13	5		12
15	1			2	8	16	6		20
16	1			2	1	15	3		10
17	1			1			1		5
18						1			
19						1			
20									
21					1				
Total	9	2	1	6	17	52	15	1	50

Appendix 7, Table 4 (cont'd)

Fork length (cm)	Set no.								Total
	184	185	186	187	188	190	198	199	
11									1
12							1		7
13	4		1		4		1	3	39
14	1		5		14			3	102
15	2	1	11	1	29		2	1	124
16	2		11	1	12	1			64
17			2		1				11
18			1						2
19									1
20									
21									1
Total	9	1	31	2	60	1	4	7	352

Appendix 7, Table 5. Length frequency of chum salmon, September 8-15, 1976.

Fork length (cm)	Set no.					
	161	163	164	165	166	172
11						
12						
13		1				
14	1					1
15			1	2		
16				1	1	1
17					1	
18						
19						
20	1					
21						
Total	2	1	1	3	2	1

Appendix 7, Table 5 (cont'd)

Fork length (cm)	Set no.					Total
	178	179	180	183	199	
11			1			1
12			1			1
13			6			7
14			10	1		13
15		1	6	1		11
16			7			10
17			4	1		5
18	1		3		1	6
19			1			1
20				1		2
21					1	1
Total	1	1	39	4	2	58

Appendix 7, Table 6. Length frequency of coho salmon, September 3-15, 1975.

Fork length (cm)	Set no.									
	160	161	163	164	166	167	168	169	170	171
11										
12				1						
13										
14										
15										
16										
17										
18										
19										
20										1
21	1									
22									1	1
23	1							1		
24		1			1			3		2
25	1		1					1		1
26	1							1		
27							1			
28							1	2		
29										
30										
31										
32										
33						1		1		
34										
-										
-										
56										
57										
58		1								
59										
60										
61						1				
62										
63										
64										
65										
Total	4	2	1	1	1	2	2	9	1	5

Appendix 7, Table 6 (cont'd)

Fork length (cm)	Set no.									
	172	173	175	178	180	182	183	185	187	188
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22							1			
23	1								2	
24										
25						1			1	1
26				2		1		1	1	3
27			1	1		1			1	8
28							1			5
29					1				1	7
30										8
31										5
32										3
33										2
34					1					
-										1
-										
56		1								
57										
58										
59										
60										
61										
62										
63										
64										
65										
Total	1	1	1	3	2	2	2	1	6	46

Appendix 7, Table 6 (cont'd)

Fork length (cm)	Set no.								Total	
	189	190	191	192	193	194	196	198		199
11										
12										1
13										
14										
15										
16										
17										1
18	1									
19										
20										6
21	2	1								2
22						1				7
23	1	1			1	1	1		1	9
24	1						1	1		22
25	2	3		1			1			20
26	2	2					1			15
27	3	2						1		11
28	1									11
29										5
30										3
31										3
32		1								1
33										3
34										
-										
-										1
56										
57										1
58										
59										
60										
61										2
62			1							
63										
64										
65										
Total	13	10	1	1	1	2	3	2	1	124

Appendix 7, Table 7. Length frequency of coho salmon, September 8-15, 1976.

[illegible]

Appendix 7, Table 7 (cont'd)

Fork length (cm)	Set No.									
	160	161	163	164	166	167	168	169	170	171
56										
57										
58	1									
59										
60										
61						1				
62										
Total	5	1	1	1	1	2	2	9	1	4

Appendix 7, Table 7 (cont'd)

[illegible]

Appendix 7, Table 7 (cont'd)

Fork length (cm)	Set No.									
	172	173	175	178	180	182	183	185	187	188
56		1								
57										
58										
59										
60										
61										
62										
Total	1	1	1	3	2	2	3	1	6	43

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Appendix 7, Table 7 (cont'd)

Fork length (cm)	Set No.									Total
	189	190	191	192	193	194	196	198	199	
56										1
57										0
58										1
59										0
60										0
61										0
62			1							2
Total	13	10	1	1	1	2	3	2	1	124

Appendix 7, Table 8. Length frequency of chinook salmon, September 8-15, 1976.

[illegible]

Appendix 7, Table 8 (cont'd)

Fork length (cm)	Set no.									
	160	161	162	163	164	165	166	167	168	169
44		1								
45	1									
46										
47										
48										
49										
50										
Total	15	10	5	9	1	2	4	1	4	20

Appendix 7, Table 8 (cont'd)

Fork length (cm)	Set no.								
	171	172	173	174	175	176	177	179	180 183
44									
45									
46									
47									
48									
49									
50									
Total	5	1	2	2	4	1	4	1	2 1

Appendix 7, Table 8 (cont'd)

Fork length (cm)	Set no.									Total
	187	188	191	192	193	195	196	198	199	
44										1
45										1
46										
47						1				1
48										
49										
50		1								1
Total	1	2	2	8	2	1	2	1	2	115

Appendix 8, Table 1. Species and numbers captured, September 20-23, 1976.

Species	Set no.																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
River lamprey	-	-	-	1	3	3	-	-	-	1	1	1	1	1	-	-	-
Pacific lamprey	-	-	-	-	-	-	-	-	-	-	-	-	-	16	-	-	-
Chum salmon	-	-	-	-	-	-	-	-	-	-	-	-	-	5	1	8	-
Chinook salmon	2	1	-	-	2	14	-	-	18	27	7	4	6	1	-	-	-
Coho salmon	1	8	4	1	2	5	1	1	5	-	-	-	-	12	12	-	-
Pink salmon	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	6
Sockeye salmon	-	-	3	-	-	1	-	1	5	7	77	-	-	41	3	1	2
Spiny dogfish	-	1	87	13	39	-	2	58	-	-	-	-	-	150	1	3	1
Pacific herring	-	-	-	1	3	-	-	-	-	-	60	50	150	150	-	-	12
Threespine stickleback	-	-	2	1	5	-	-	-	1	-	12	-	6	-	-	-	-
Capelin	-	-	-	-	-	-	-	-	-	-	-	-	50	-	-	-	-

Appendix 8, Table 1 (cont'd)

[illegible]

Appendix 8, Table 2. Length frequency of river lamprey, September 20-23, 1976.

Total length (cm)	Set no.									Total
	4	5	6	10	11	12	13	14	19	
18.0										
18.5										
19.0									1	1
19.5										
20.0										
20.5										
21.0										
21.5										
22.0					1					1
22.5										1
23.0			1							1
23.5		1								
24.0							1	1		4
24.5		1		1						1
25.0		1								1
25.5	1									
26.0						1				2
26.5			1							
27.0										
Total	1	3	2	1	1	1	1	1	1	12

Appendix 3, Table 3. Length frequency of
Pacific lamprey, September 20-23, 1976.

Total length (cm)	Set no.
	14
20.0	2
20.5	1
21.0	2
21.5	3
22.0	
22.5	1
23.0	3
23.5	
24.0	1
24.5	
25.0	2
25.5	1
26.0	
Total	16

Appendix 8, Table 4. Length frequency of spiny dogfish, Sept. 20-23, 1976.

[illegible]

Appendix 8, Table 4 (cont'd)

Total length (cm)	Set no.														
	2			3			4			5			7		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
70															
71															
72															
73															
74															
75															
76															
77															
78															
79															
80															
81															
82															
83															
84															
85															
86															
87															
88															
89															
90															
91															
92															
93															
94															
95															
96															
97															
98		1	1												
99															
Total	1	1	39	48	87	10	3	13	25	14	39		2	2	

Appendix 8, Table 4 (cont'd)

[illegible]

Appendix 8, Table 4 (cont'd)

Total length (cm)	Set no.														
	8			15			16			17			18		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
70															
71															
72															
73															
74															
75															
76															
77															
78															
79															
80															
81															
82															
83															
84															
85															
86															
87															
88															
89															
90															
91															
92															
93															
94															
95															
96															
97															
98															
99															
Total	34	24	58	1		1	1	2	3	1		1	2	1	3

Appendix 8, Table 4 (cont'd)

Total length (cm)	Set no.					
	24			Total		
	M	F	T	M	F	T
25						
26						
27						
28						
29				2		2
30				2	2	4
31				8	1	9
32				9	12	21
33				17	14	31
34	1		1	11	13	24
35				15	14	29
36		1	1	21	13	34
37				6	8	14
38				6	8	14
39				10	5	15
40		1	1	2	4	6
41				1	1	2
42				1	1	2
43						
44				2		2
45						
46						
47						
48						
49						
50						
51						
52						
53						
54						
55						
56						
57						
58						
59						
60						
61						
62						
63						
64						
65				1		1
66						
67						
68						
69						

Appendix 8, Table 4 (cont'd)

Total length (cm)	Set no.					
	24			Total		
	M	F	T	M	F	T
70						
71						
72						
73						
74						
75						
76						
77						
78						
79						
80						
81						
82						
83						
84						
85						
86						
87						
88						
89						
90						
91						
92						
93						
94						
95						
96						
97					1	1
98						
99						
Total	1	2	3	114	97	211

Appendix 9, Table 1 (cont'd)

Species	Set no.										
	211	212	213	214	215	216	217	218	219	220	221
River lamprey	-	-	-	-	-	-	-	-	-	-	-
Pacific lamprey	-	-	-	-	-	-	-	-	-	-	-
Chum salmon	-	-	-	-	-	-	3	1	1	-	-
Chinook salmon	1	5	-	-	-	-	7	5	-	-	-
Coho salmon	1	1	-	-	-	-	-	13	3	3	6
Pink salmon	-	-	-	-	-	-	-	-	1	-	-
Sockeye salmon	-	-	-	-	-	-	-	-	-	-	-
Spiny dogfish	-	-	4	-	1	-	1	-	-	-	-
Pacific herring	-	-	45 ^a	36 ^a	22 ^a	45 ^a	7 ^a	11 ^a	9 ^a	-	-
Pacific hake	-	-	15	4	6	59	-	-	-	-	-
Walleye pollock	-	-	3	394	1	-	-	-	-	-	-
Plainfin midshipmen	-	-	-	2	60	-	-	-	-	-	-
Threespine stickleback	~30	~20	~100	-	-	-	~50	-	-	~200	-
Northern anchovy	-	-	~25	-	-	-	-	-	-	-	-
Pacific sand lance	-	-	-	-	-	-	-	-	-	-	-
Eulachon	-	-	1	-	-	-	-	-	-	-	-
Saddleback gunnel	-	-	-	-	-	1	-	-	-	-	-

Appendix 9, Table 1 (cont'd)

Species	Set no.												Total
	232	233	234	235	236	237	238	239	240	241	242		
River lamprey	-	-	-	-	-	-	-	-	-	-	-	-	
Pacific lamprey	-	-	-	-	-	-	-	-	-	-	-	-	
Chum salmon	-	-	-	-	-	-	2	-	-	4	1	107	
Chinook salmon	-	-	-	-	-	2	1	-	-	8	4	85	
Coho salmon	3	-	1	-	-	-	-	-	-	-	-	70	
Pink salmon	3	1	-	-	-	-	-	-	-	-	-	15	
Sockeye salmon	-	-	-	-	-	3	1	-	-	-	-	4	
Spiny dogfish	-	-	-	-	-	-	-	-	227*	-	-	10	
Pacific herring	-	-	-	-	-	-	-	-	-	-	-	821*	
Pacific hake	-	-	-	-	-	-	-	-	-	-	-	84	
Walleye pollock	-	-	-	-	-	-	-	-	-	-	-	398	
Plainfin midshipmen	-	-	-	-	-	-	-	-	-	-	-	62	
Threespine stickleback	-	-	-	-	-	12	-	-	-	12	~300	999	
Northern anchovy	-	-	-	-	-	-	-	-	-	-	-	25	
Pacific sand lance	-	-	-	-	-	-	-	-	-	-	-	-	
Eulachon	-	-	-	-	-	-	-	-	-	-	-	1	
Saddleback gunnel	-	-	-	-	-	-	-	-	-	-	-	1	

*Weight/kg.

Appendix 9, Table 2. Length frequency of hake, October 14-25, 1976.

Fork length (cm)	Set no.				Total
	213	214	215	216	
25			1	1	2
26				2	2
27				3	3
28					
29				1	1
30				1	1
31				4	4
32	1			1	2
33					
34				3	3
35				7	7
36				10	10
37	1			2	3
38				5	5
39				3	3
40				1	1
41	1			5	6
42		2		3	5
43			1	2	3
44				1	1
45	5	1		4	10
46	3	1	2		6
47	2				2
48	1		1		2
49			1		1
50	1				1
Total	15	4	6	59	84

Appendix 9, Table 3. Length frequency of pollock, October 14-25, 1976.

Fork length (cm)	Set no.			Total
	213	214	215	
8		4		4
9		50		50
10	1	174		175
11	1	129		130
12		34	1	35
13		3		3
-				
-				
36	1			1
Total	3	394	1	398

Appendix 9, Table 4. Length frequency of spiny dogfish, October 14-25, 1976.

Total length (cm)	Set no.														
	207			210			213			215			217		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
36															
37													1		1
-															
-															
78							1		1						
-															
-															
87								1	1						
-															
-															
97											1	1			
98															
99					1	1									
-															
-															
104								1	1						
105															
106															
107		1	1												
108								1	1						
Total	0	1	1	0	1	1	1	3	4	0	1	1	1	0	1

Appendix 9, Table 4 (cont'd)

Total length (cm)	Set no.					
	230			Total		
	M	F	T	M	F	T
36				1		1
37		1	1		1	1
-						
-						
78				1		1
-						
-						
87					1	1
-						
-						
97					1	1
98						
99					1	1
-						
-						
104					1	1
105						
106						
107					1	1
108					1	1
Total	0	1	1	2	7	9

Appendix 9, Table 5. Length frequency of pink salmon, October 14-25, 1976.

Fork length (cm)	Set no.						Total
	201	219	224	229	232	233	
17				1			1
18		1		2			3
19	1		1	4	1		7
20							
21				1	1	1	3
22					1		1
23							
24							
25							
26							
27							
Total	1	1	1	8	3	1	15

Appendix 9, Table 6. Length frequency of chum salmon, October 14-25, 1976.

Fork length (cm)	Set no.							Total
	200	217	218	219	222	238	242	
15	1							1
16	4			1				5
17	26	1						27
18	24				1			25
19	13	1			1			15
20	6	1						7
21	4							4
22	1				1		1	3
23	1							1
-								
-								
62	1							1
63								
64								
65								
66								
67								
68	2							2
69								
70								
71								
72						1		1
73			1					1
74								
75	3							3
76	2					1		3
77	1							1
78	2							2
79								
80								
81	1							1
Total	92	3	1	1	3	2	1	103

Appendix 3, Table 7. Length frequency of coho salmon, October 14-25, 1976.

Fork length (cm)	Set no.									
	200	201	202	203	211	212	218	219	220	221
20										
21										
22										
23										
24										
25	1							1	1	3
26				1				1	1	
27		1								2
28									1	
29						1				1
30	2		1		1					
31										
32							1			
33										
34										
35										
36										
37										
-										
-										
62							1			
63										
64							1			
65							1			
66										
67										
68							1			
Total	3	1	1	1	1	1	5	2	3	6

Appendix 9, Table 7 (cont'd)

Fork length (cm)	Set no.									Total
	222	226	227	228	229	230	231	232	234	
20				1						1
21										
22										
23	1									1
24										
25				1						7
26	1			3						7
27			1	3	1	3		1		12
28				1						2
29	1			3	2					8
30	1			1		1	1			8
31						1	1			2
32				2		1				4
33								1		1
34										
35										
36										
37									1	1
-										
-										
62										1
63										
64		1								2
65										1
66										
67										
68		1								2
Total	4	2	1	15	3	6	2	2	1	60

Appendix 9, Table 8. Length frequency of chinook salmon, October 14-25, 1976.

Fork length (cm)	Set no.									
	200	201	202	203	204	205	208	209	210	211
13										
14						1				
15	1			1	1				1	
16	2				1			1		1
17								1		
18								1		
19	1						1			
20	1		1							
21	2									
22	1							1		
23	1		2	1						
24	2	1	1							
25			4	2						
26	1		1							
27		1	1							
28										
29			1							
30										
31										
32										
33										
34			1	1						
35										
36										
37										
38										
39										
40										
41										
42			1							
43										
44										
45										
46										
47										
48										
49										
50										
51										
Total	12	2	13	5	2	1	1	3	1	1

Appendix 9, Table 8 (cont'd)

Fork length (cm)	Set no.										Total
	212	217	220	222	224	229	237	238	241	242	
13									1		1
14				2							3
15									1		5
16							1				6
17											1
18										1	2
19						1		1	2	1	6
20		1	1			1					5
21		1		1	1				1		7
22			1	1					2		5
23									1	1	6
24	1		2							1	8
25		1									7
26		2		2							6
27	2	1									5
28											
29				1							2
30											
31	1										1
32											
33											2
34											
35											
36			1								1
37											
38											
39											
40				1							1
41											
42											1
43											
44	1										1
45											
46				1							1
47											
48											
49											
50											
51		1					1				2
Total	5	7	5	9	1	2	2	1	8	4	85

Appendix 10, Table 1. Species and numbers captured, Fraser River area.

Species	Set no.									
	152	153	154	155	156	157	Total	September 7, 1976		
River lamprey	7	6	5	5	12	12	47		2	
Pacific lamprey	-	-	-	-	-	-			9	
Chum salmon	-	-	2	-	-	)				
Chinook salmon	10	4	22	34	72	)			8	
Coho salmon	4	3	2	5	2	)~60				
Pink salmon	-	-	-	2	1	)				
Sockeye salmon	-	2	1	3	-	)			9	
Spiny dogfish	-	29	9	9	3	4			~12	
Pacific herring	~250	~300	-	118	475	~200			~500	
Threespine stickleback	-	-	-	14	-	-				
Northern anchovy	-	-	-	-	2	-				
Steelhead	1	3	1	1	-	2				
Bay pipefish	-	-	-	1	-	-				

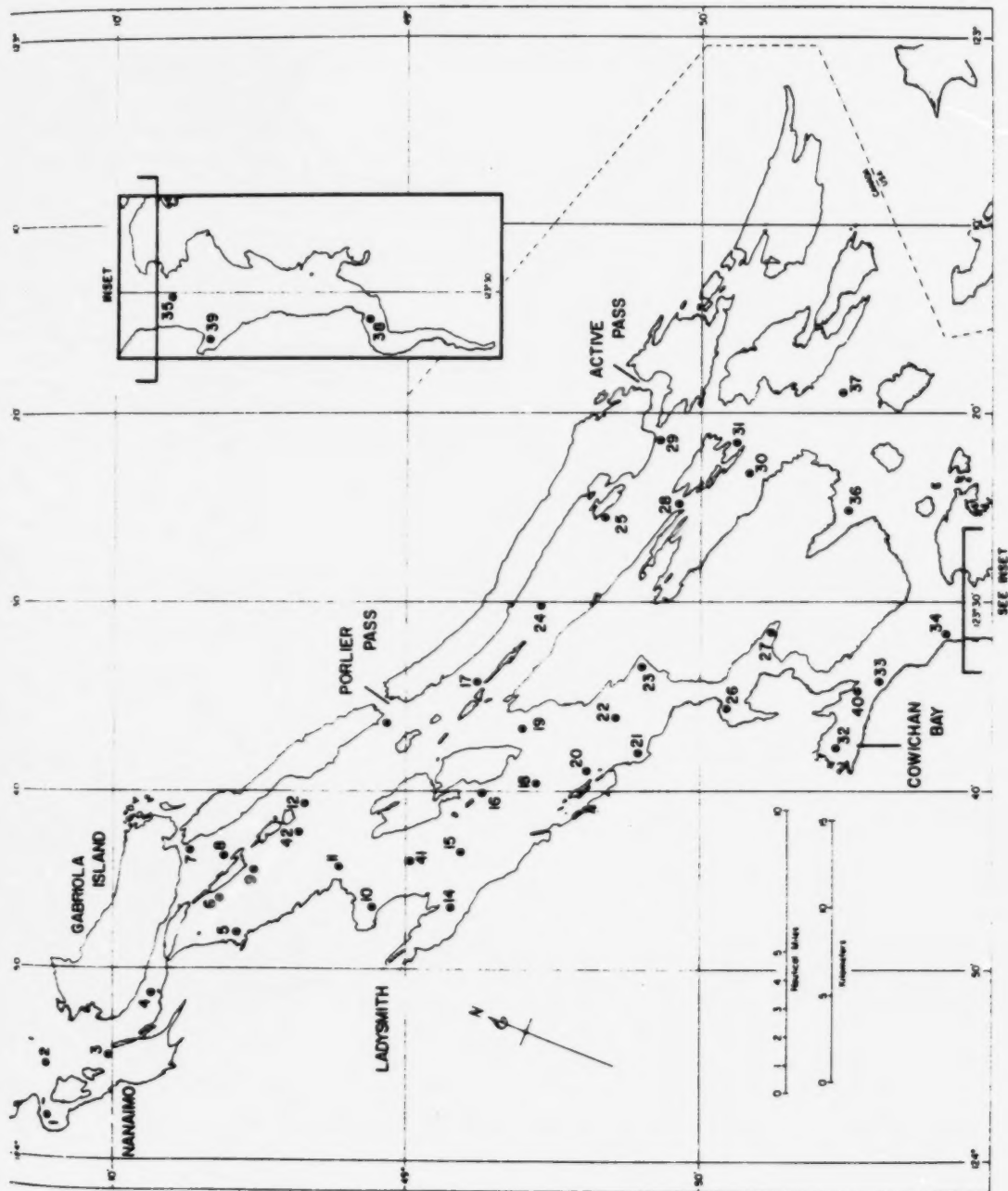


Fig. 1. Set locations in the Gulf Islands.

- 258

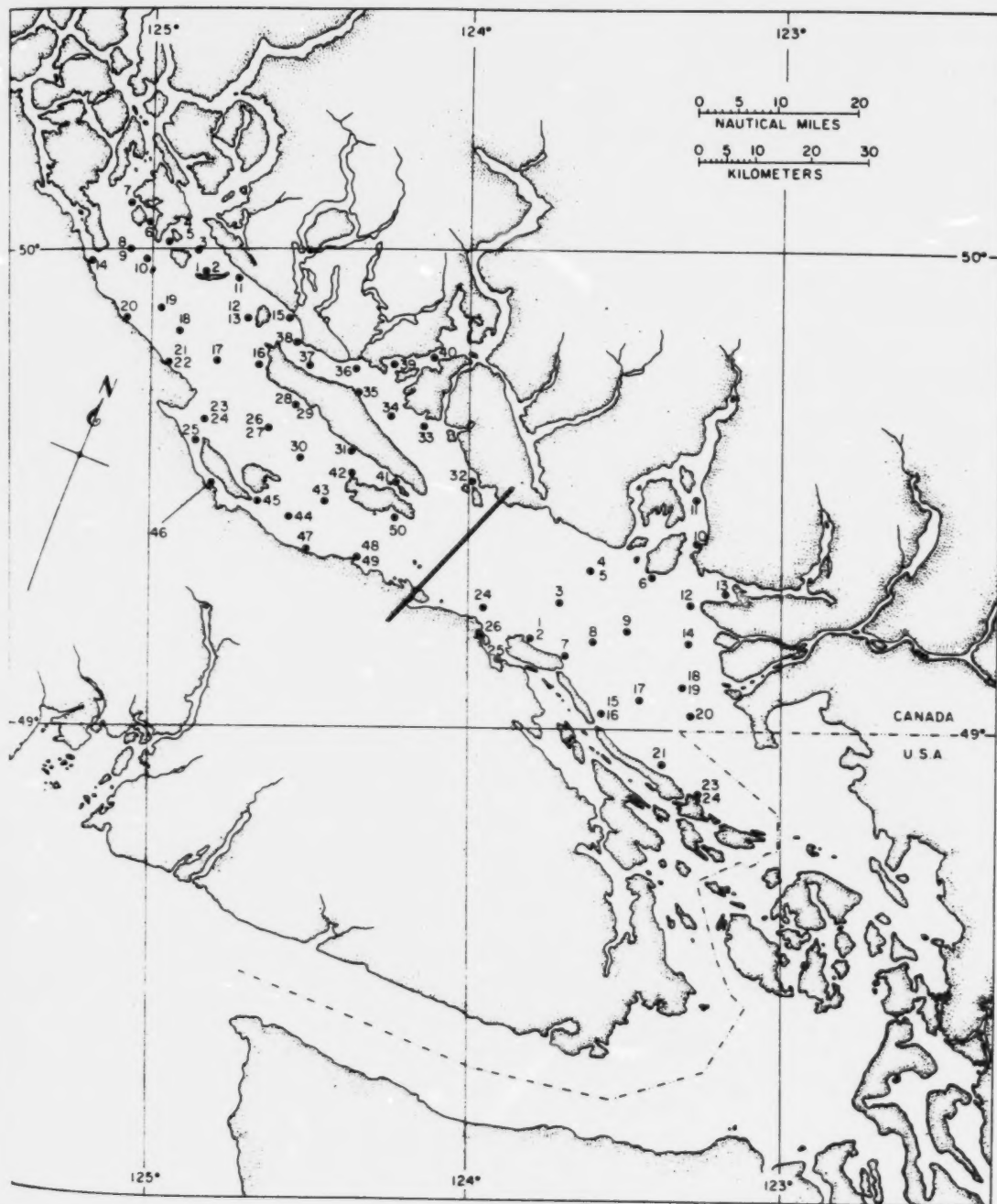


Fig. 2. Set locations in the Strait of Georgia outside of the Gulf Islands.

- 260 -

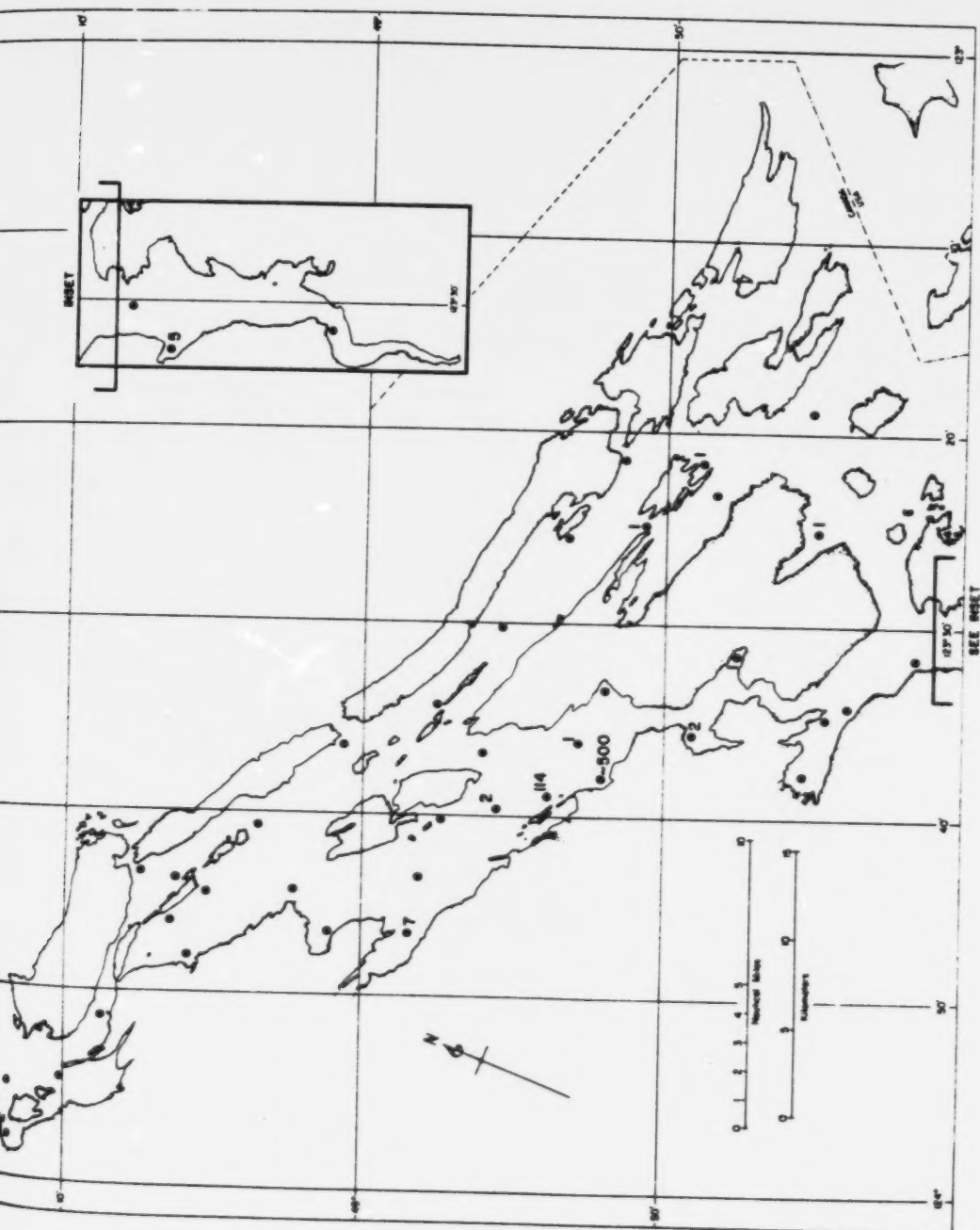


Fig. 3. Dogfish catches, May 11-21.

- 262 -

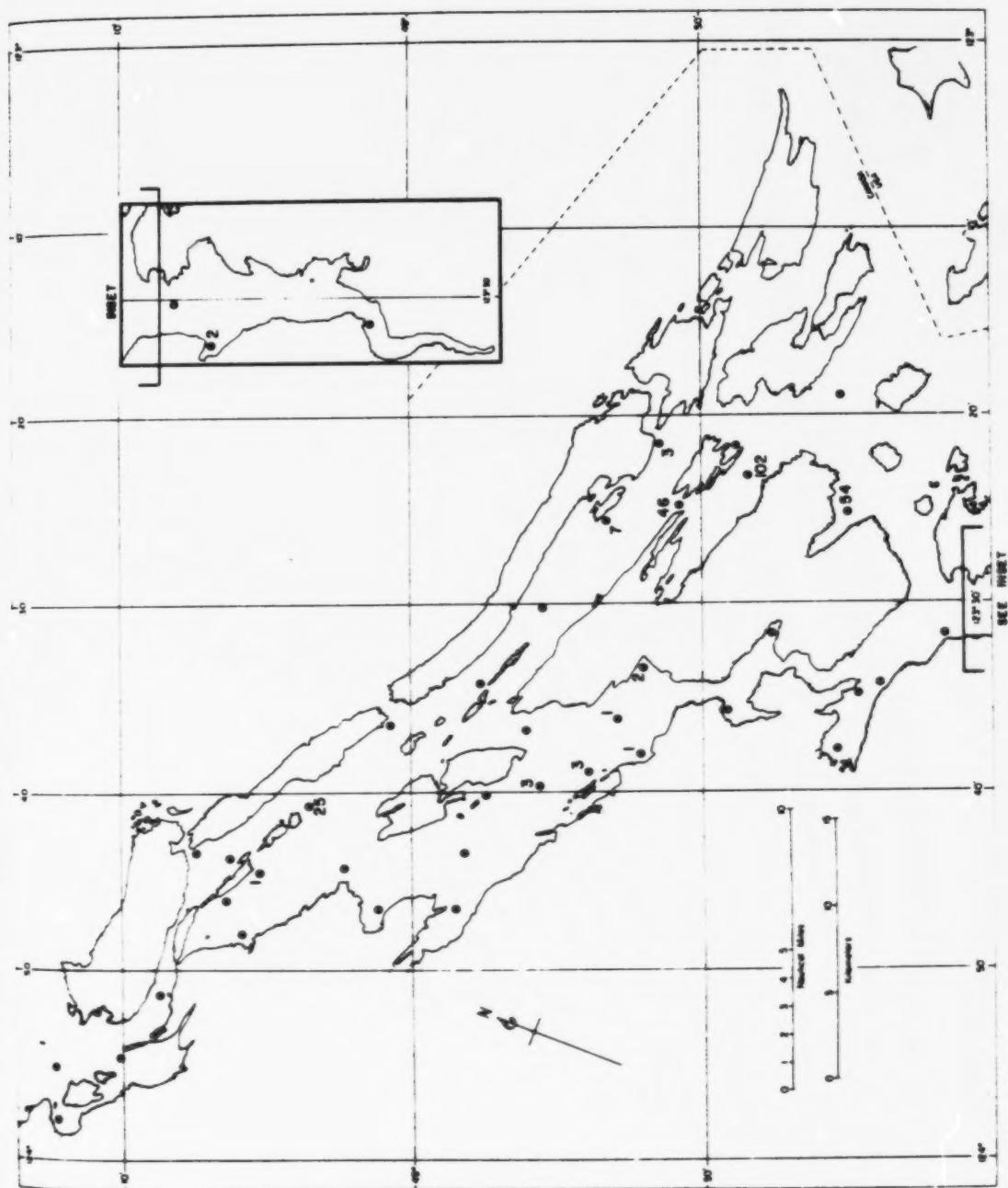


Fig. 4. Sockeye salmon catches, May 11-21.

- 264 -

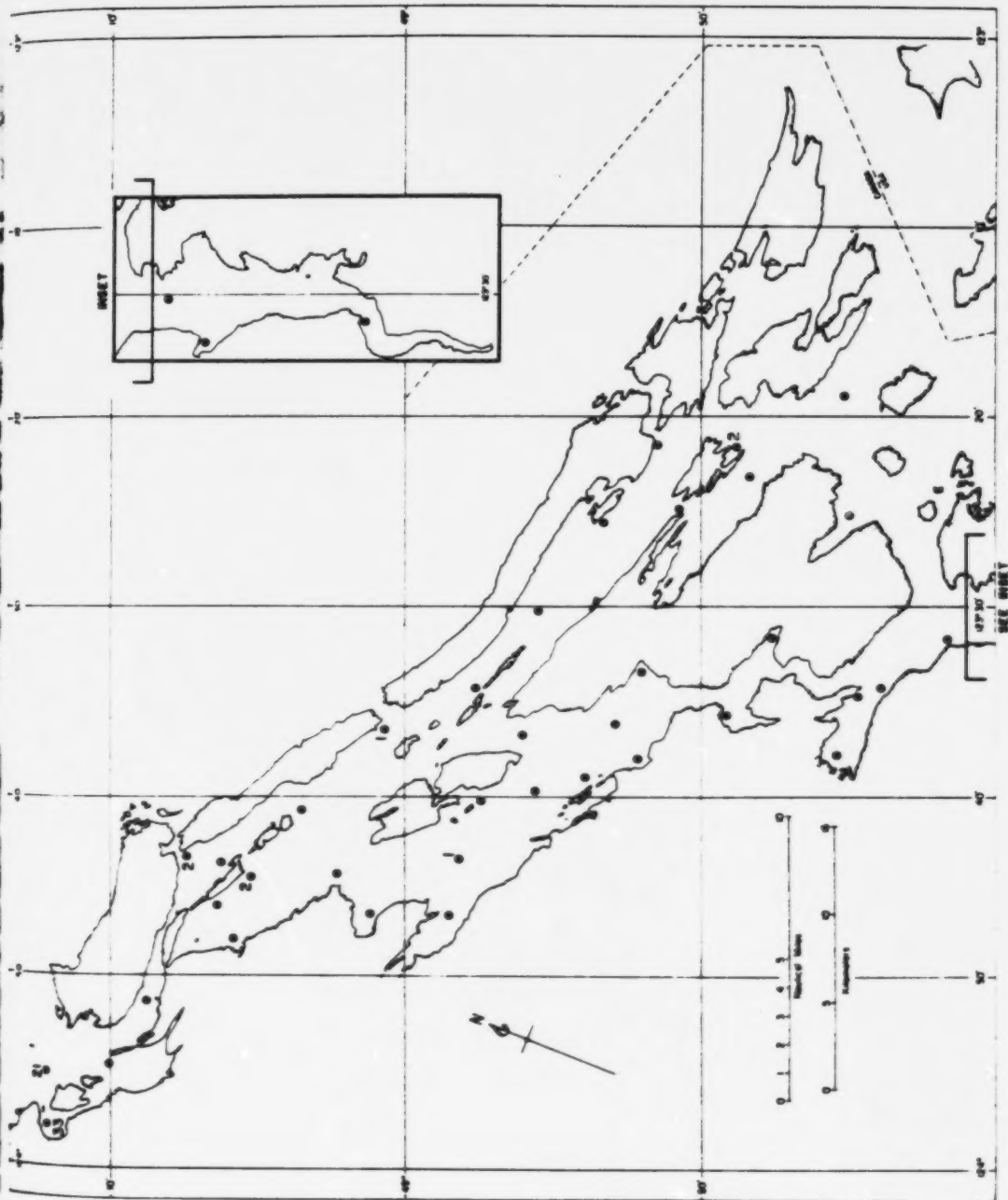


Fig. 5. Pink salmon catches, May 11-21,

— 266 —

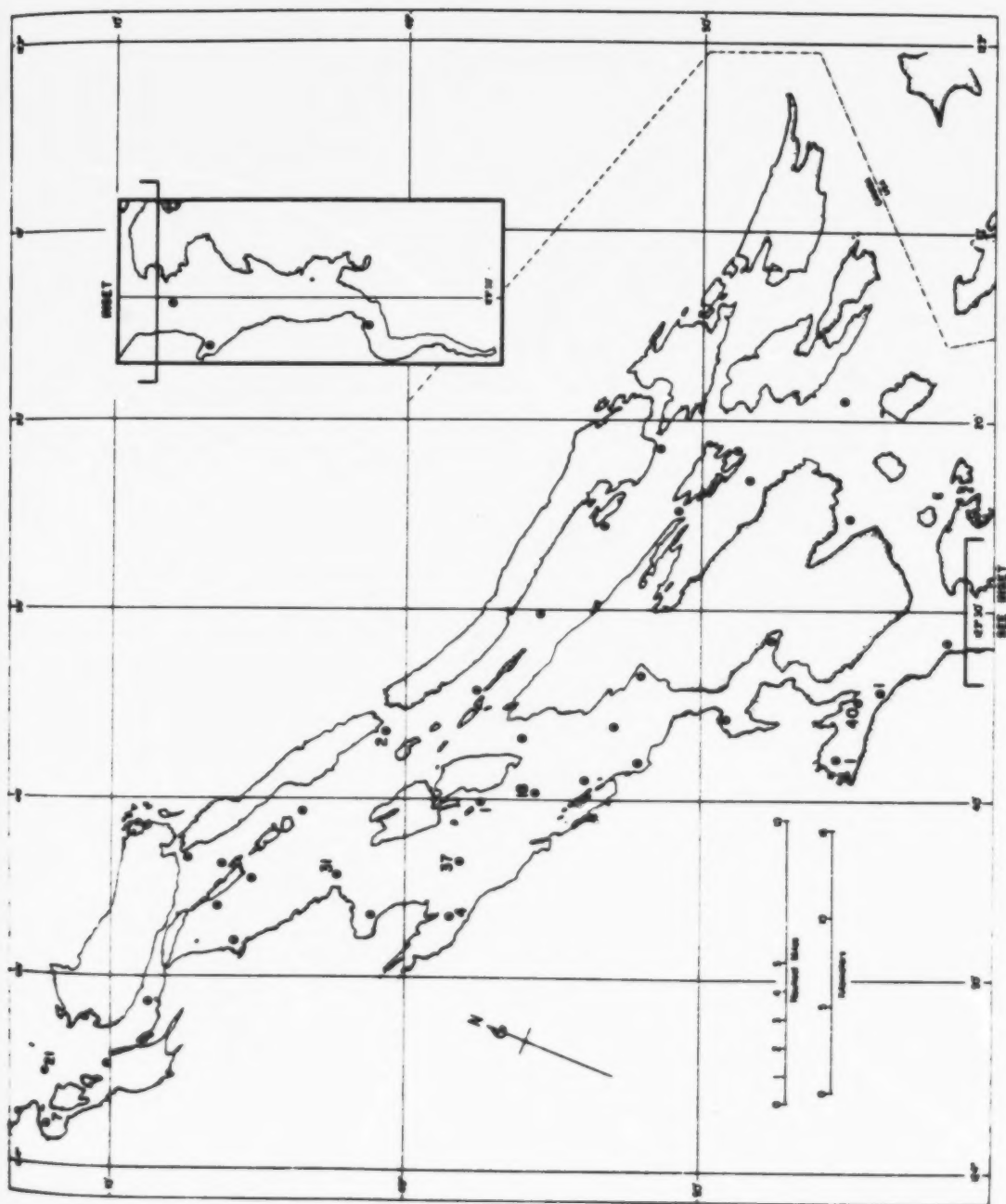


Fig. 6. Chum salmon catches, May 11-21.

- 268 -

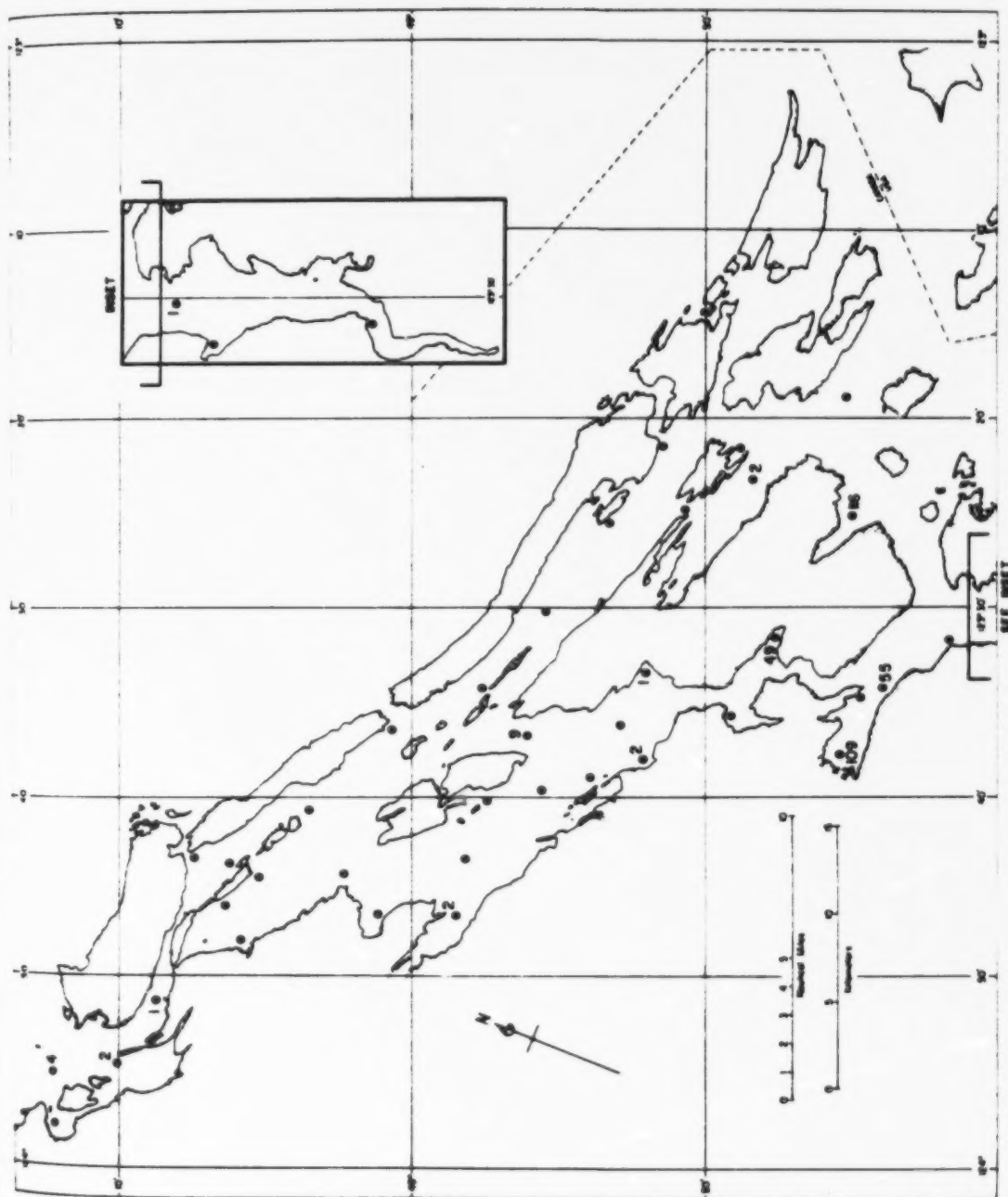


Fig. 7. Coho salmon catches, May 11-21.

- 270 -

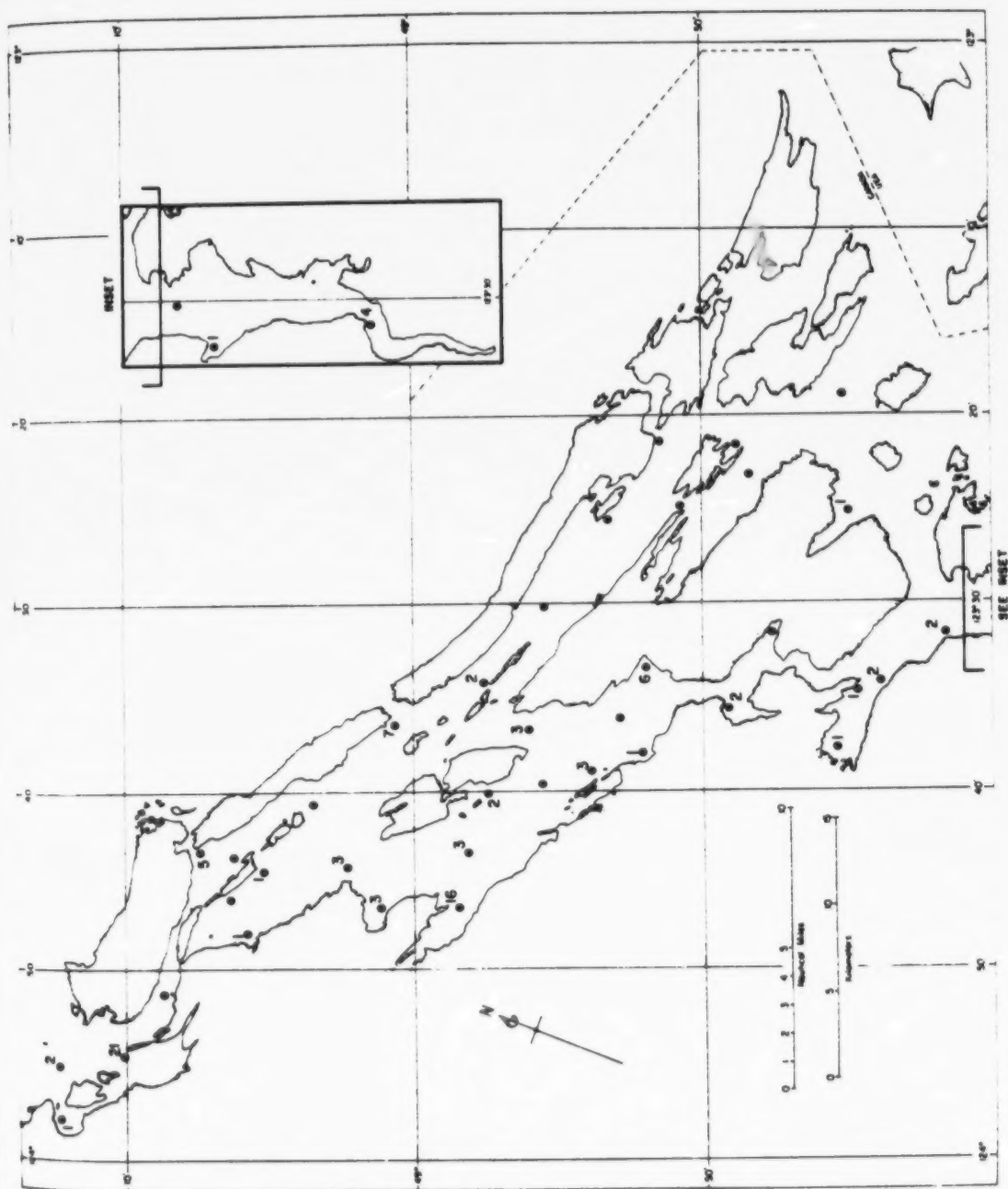


Fig. 8. Chinook salmon catches, May 11-21.

- 272 -

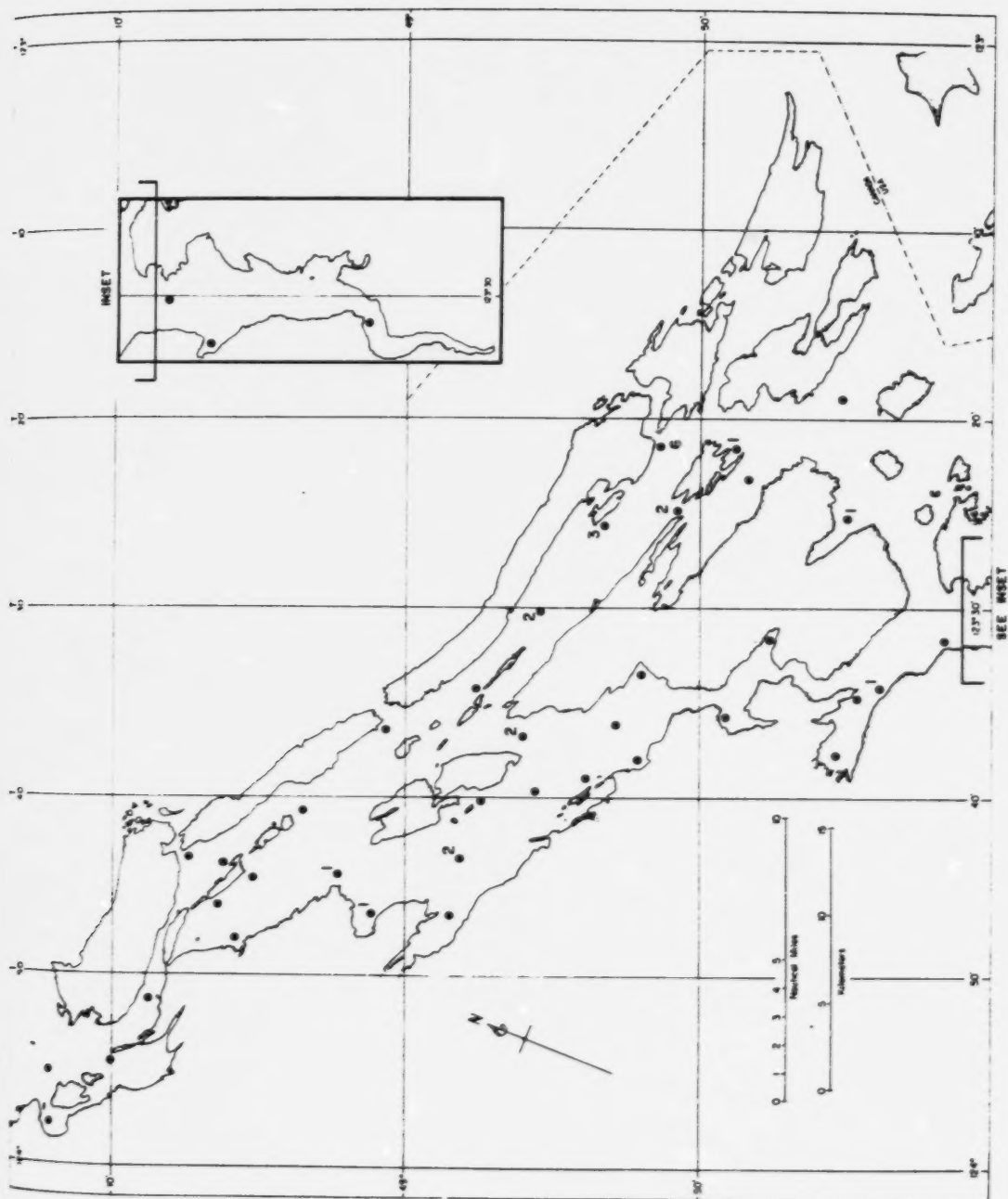


Fig. 9. River lamprey catches June 21-26.

-274-

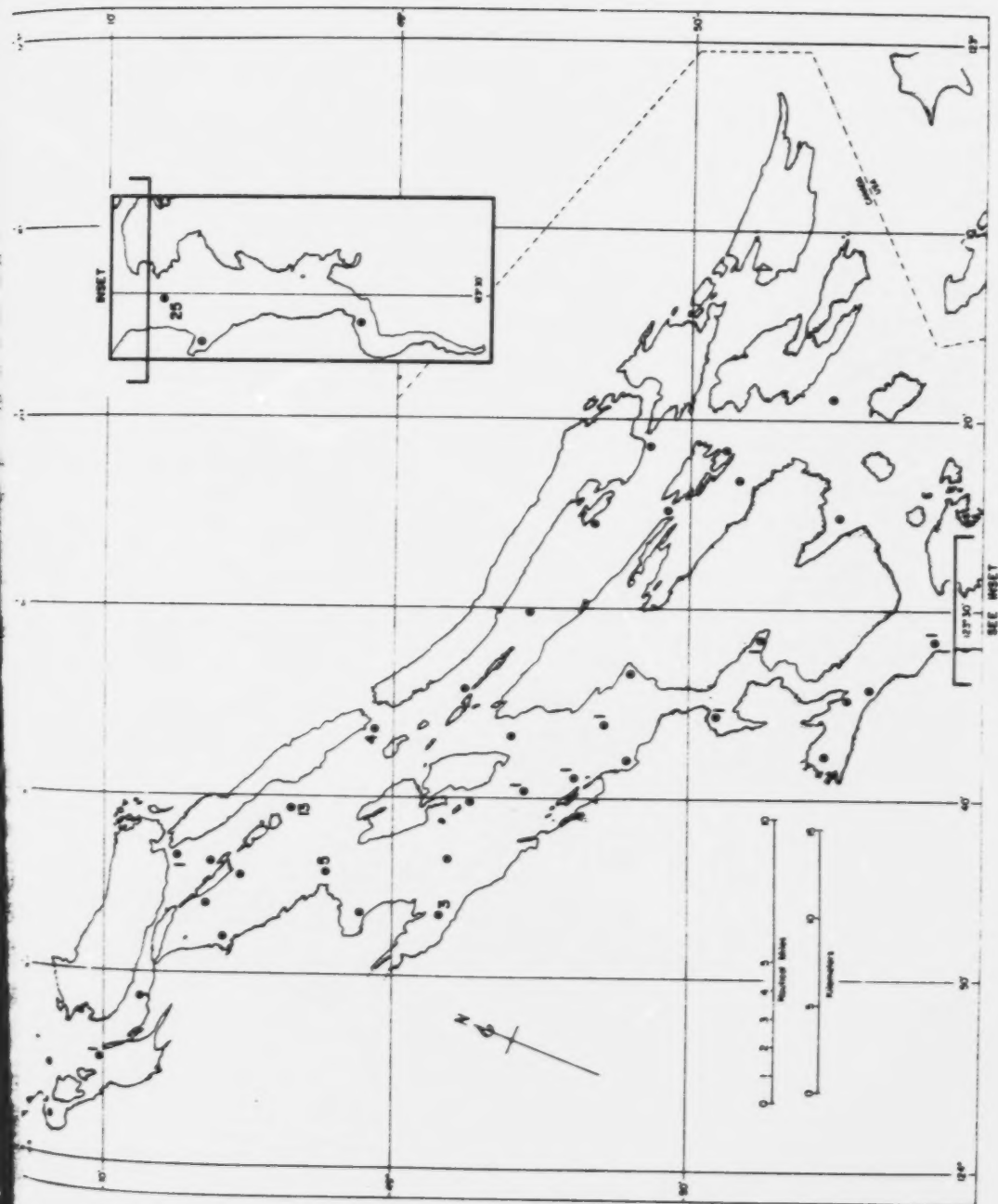


Fig. 10. Dogfish catches June 21-26.

-276-

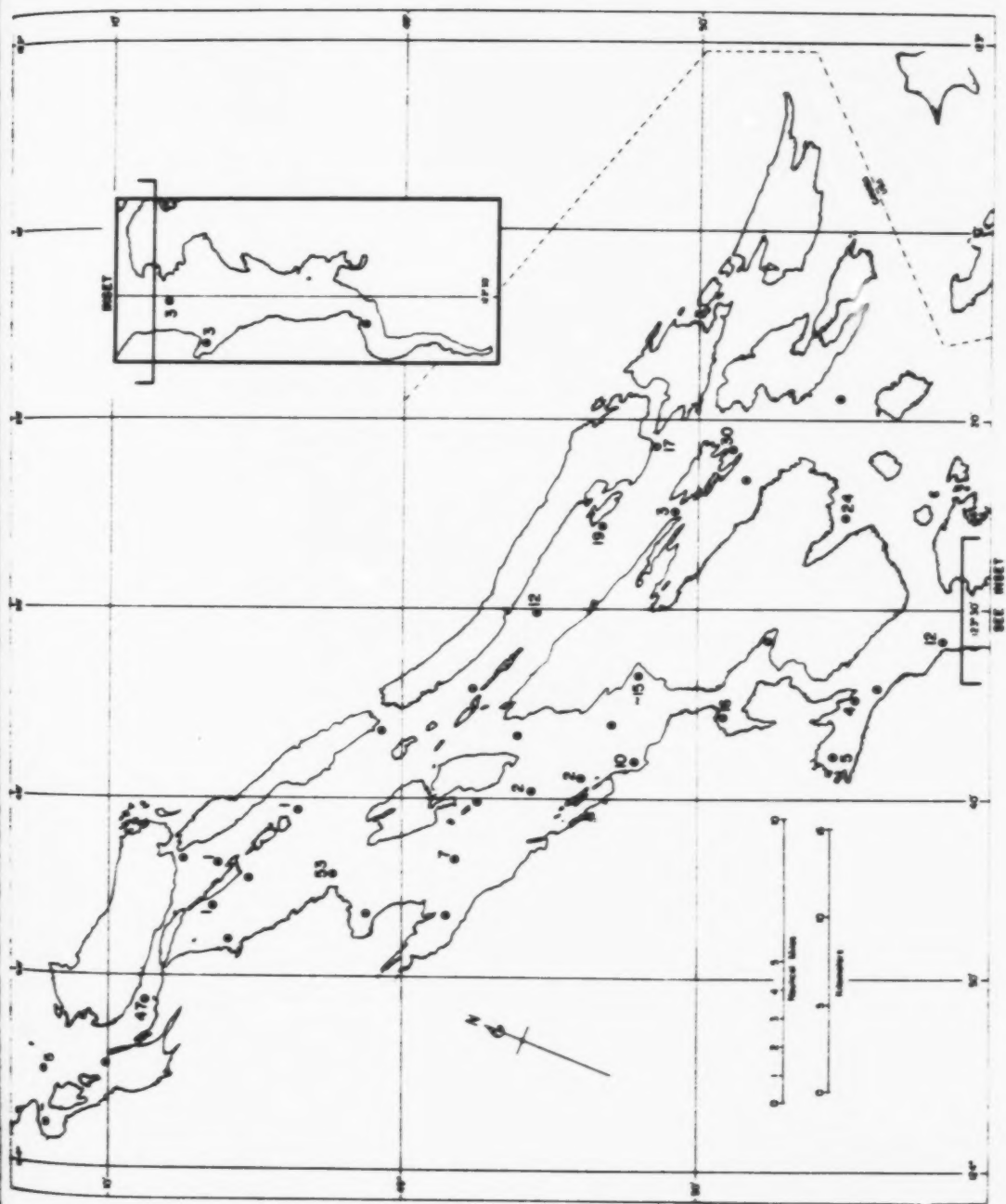


Fig. 11. Sockeye salmon catches June 21-26.

- 278 -

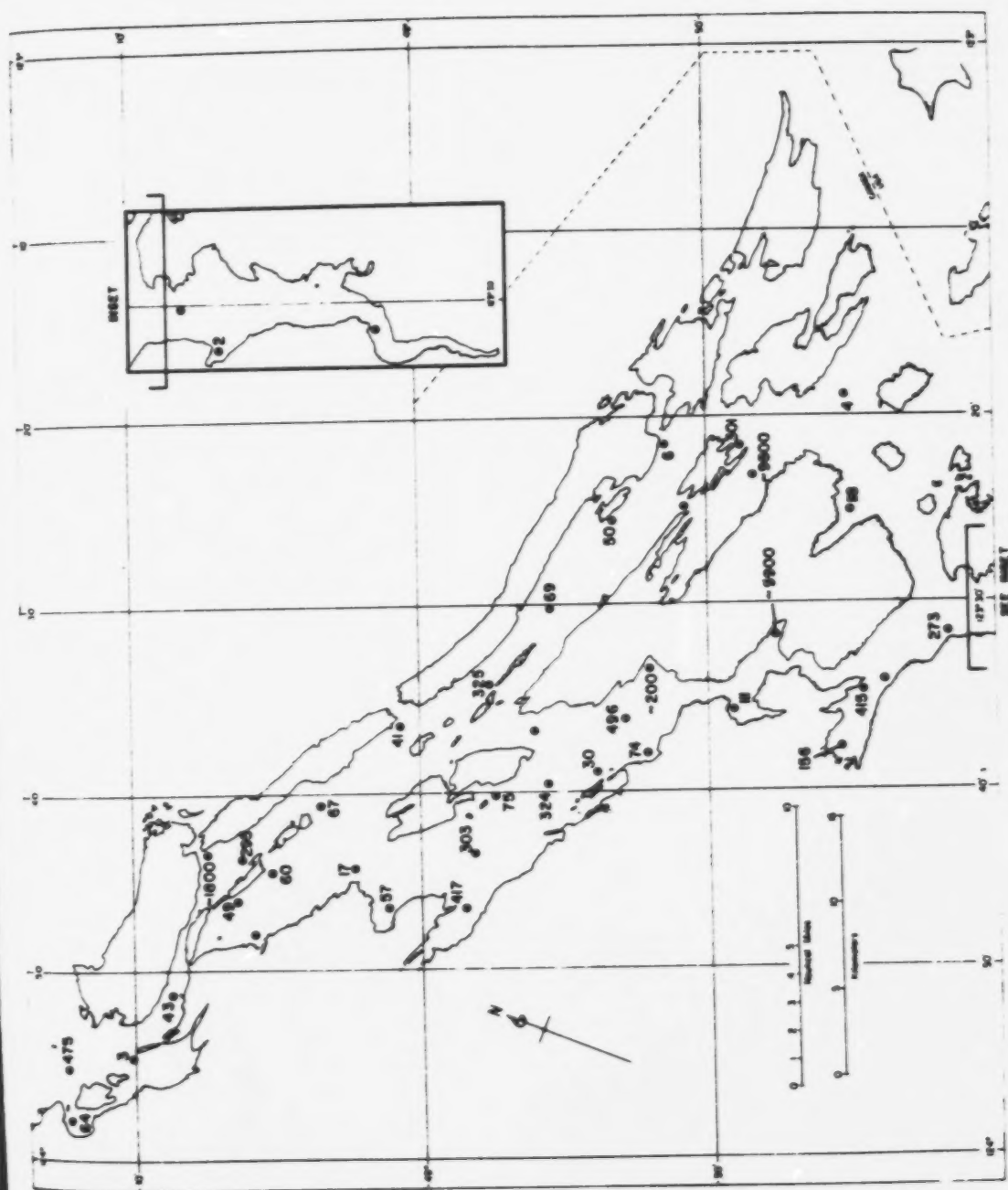


Fig. 12. Pink salmon catches June 21-26.

- 280 -

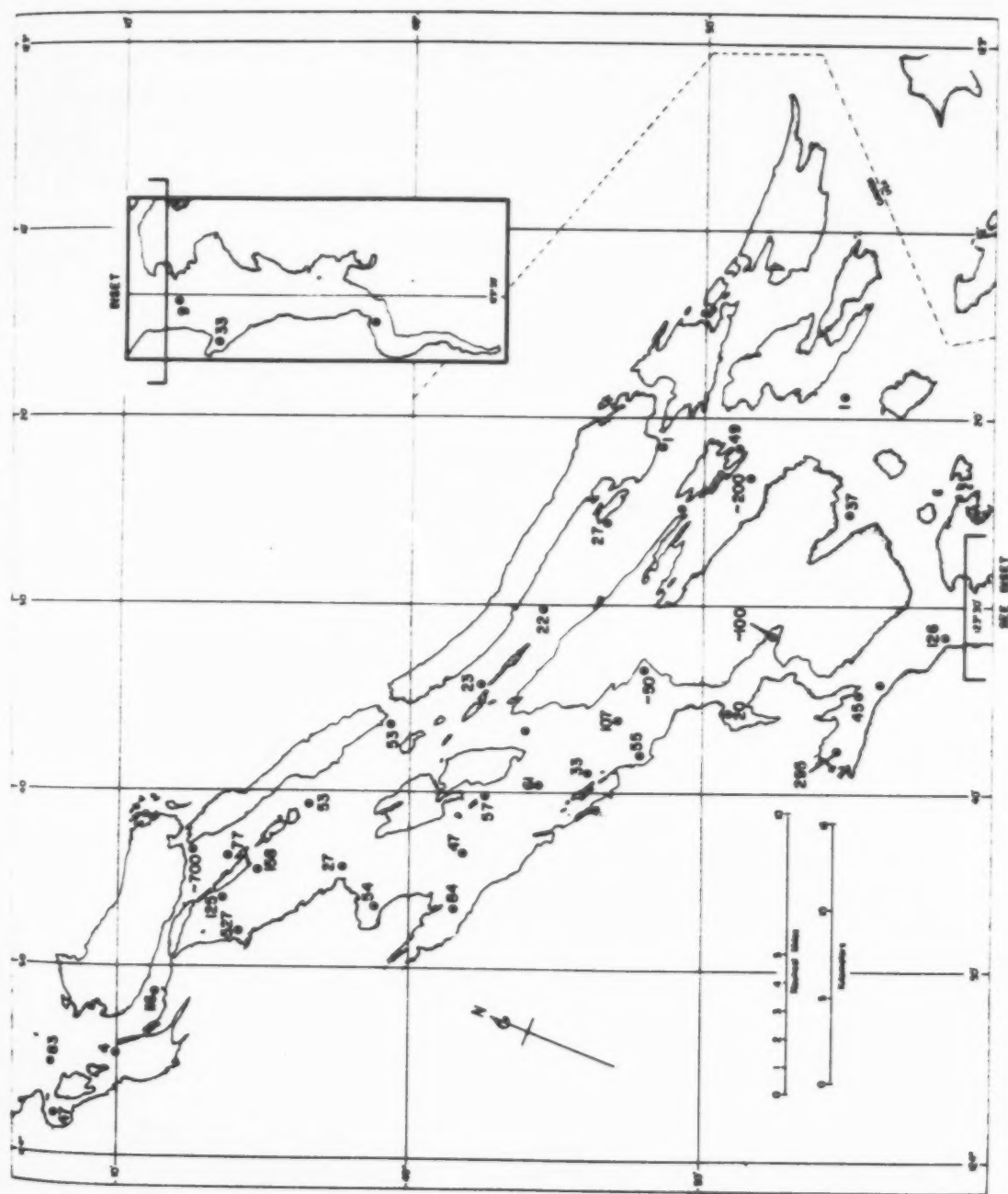


Fig. 13. Chum salmon catches June 21-26.

-282-

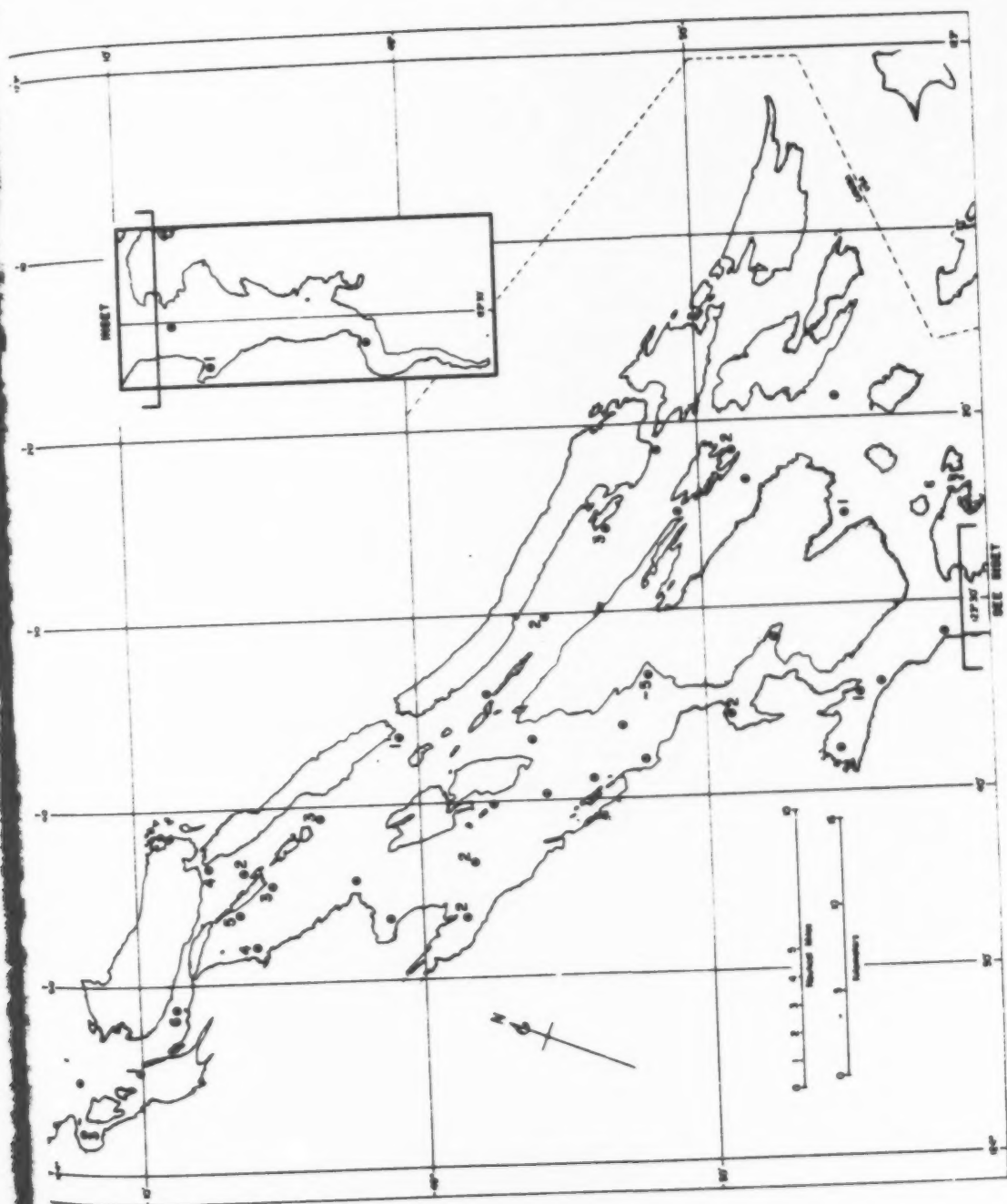


Fig. 14. Coho salmon catches June 21-26.

- 284 -

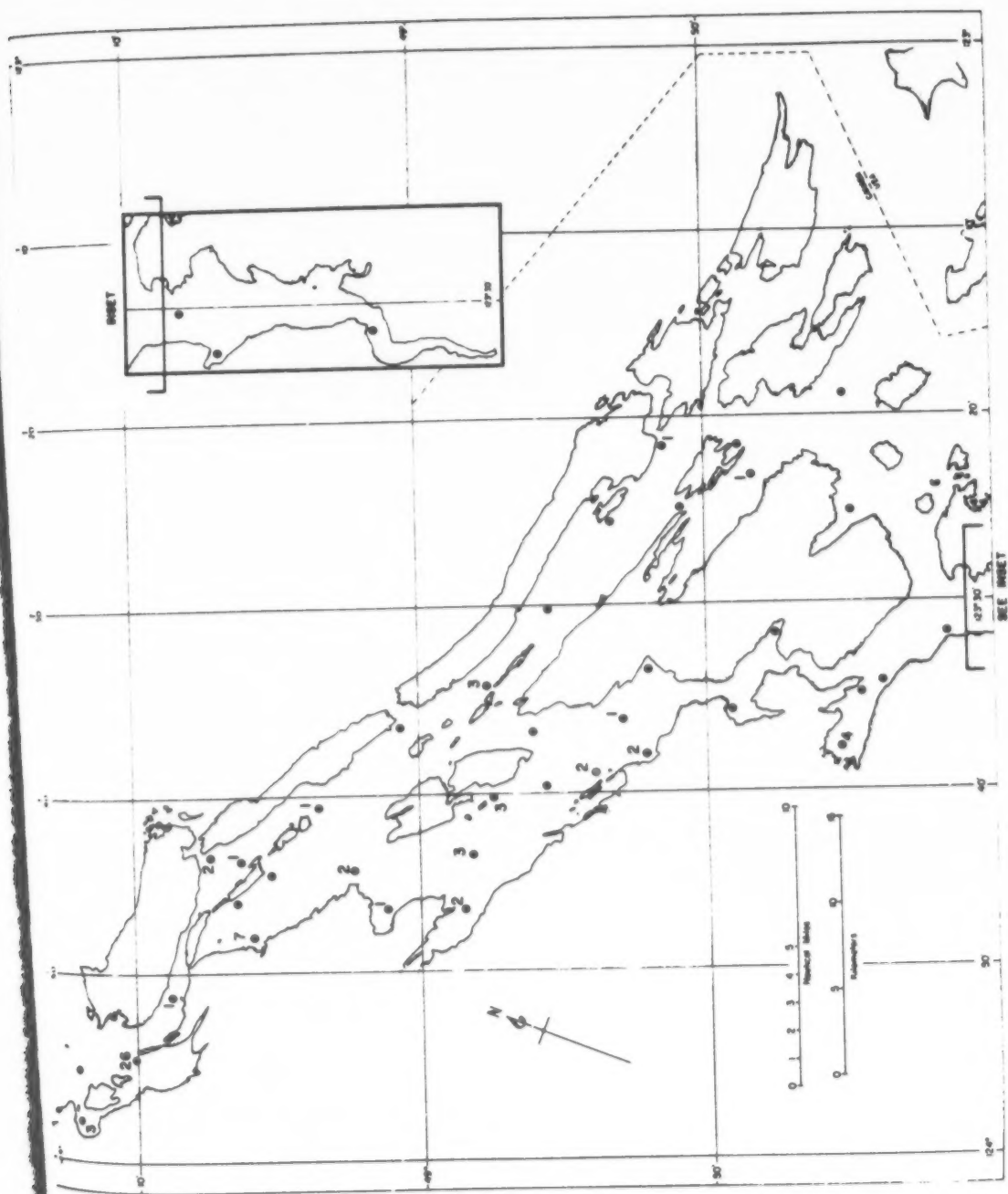


Fig. 15. Chinook salmon catches June 21-26.

- 286 -

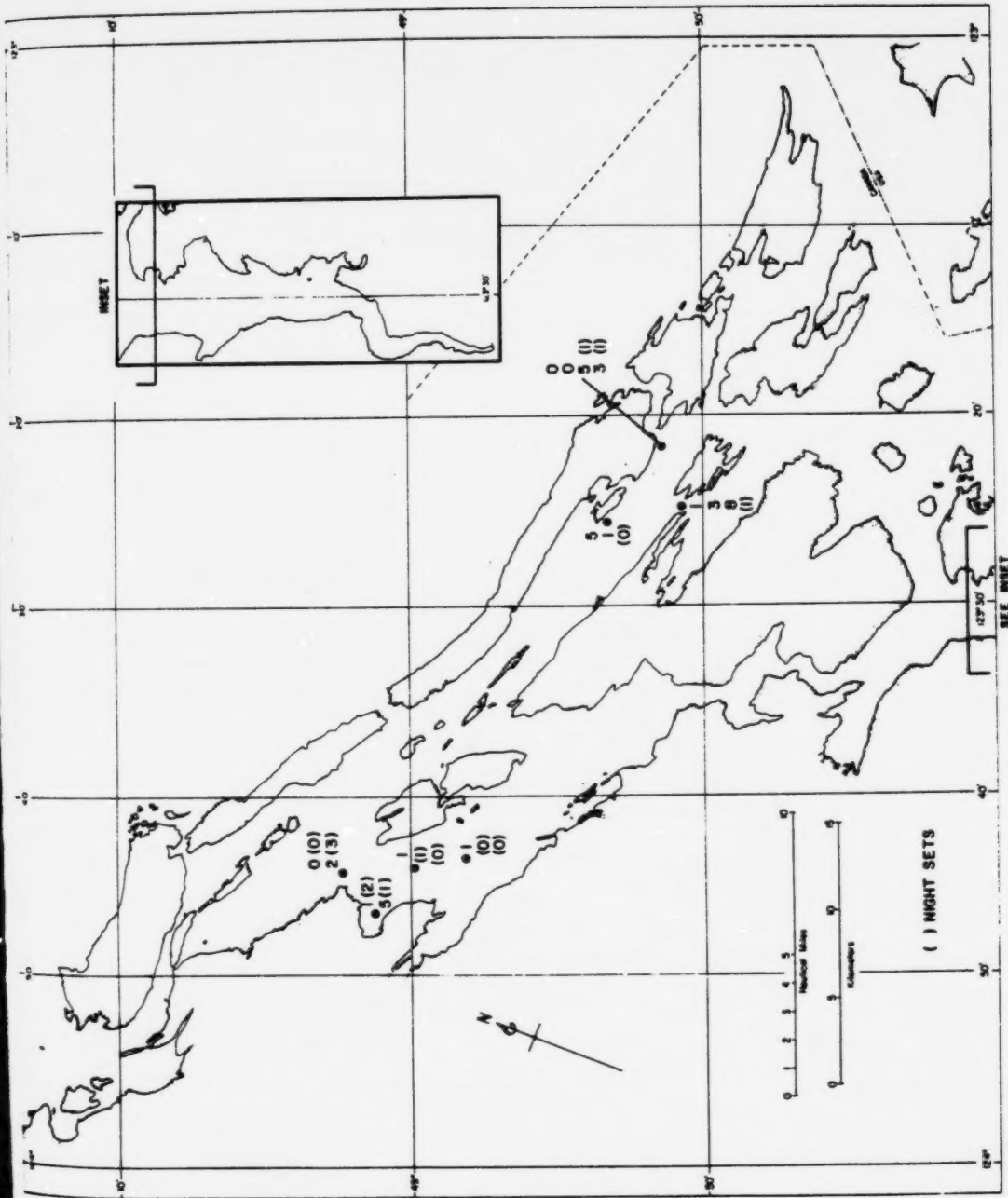


Fig. 16. River lamprey catches July 5-9.

-288-

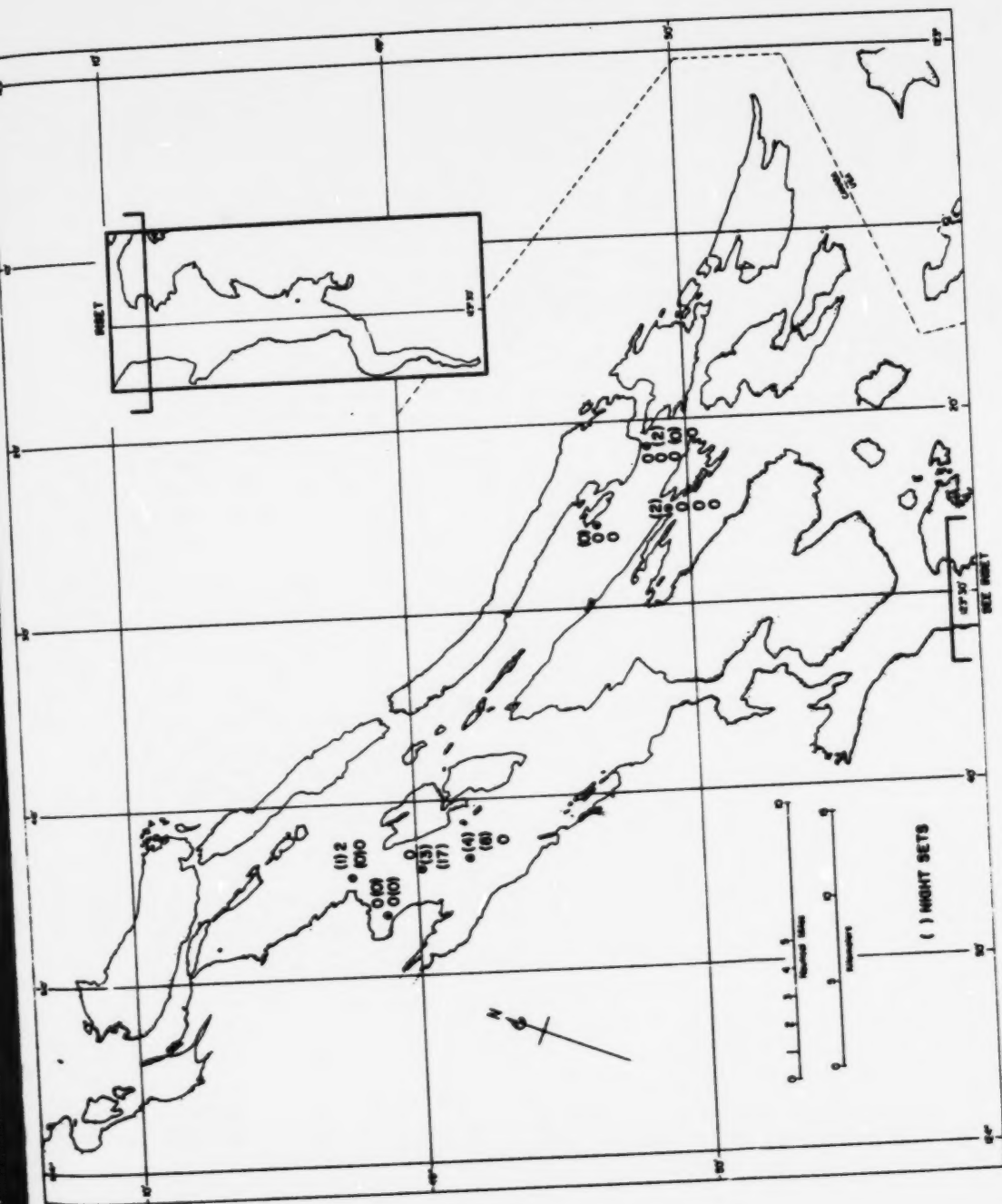


Fig. 17. Dogfish catches July 5-9.

-290-

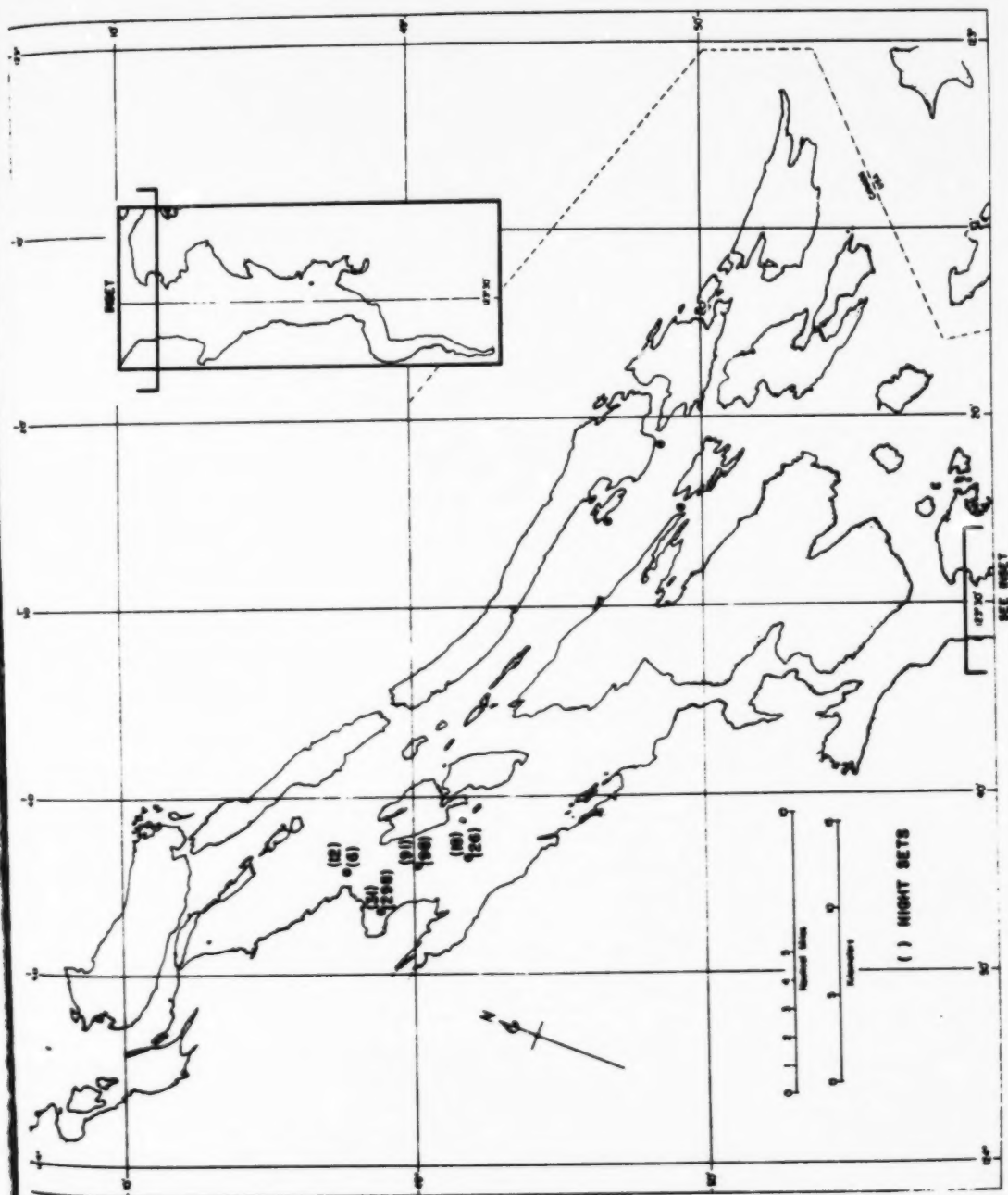


Fig. 18. Pacific hake catches July 5-9.

-292-

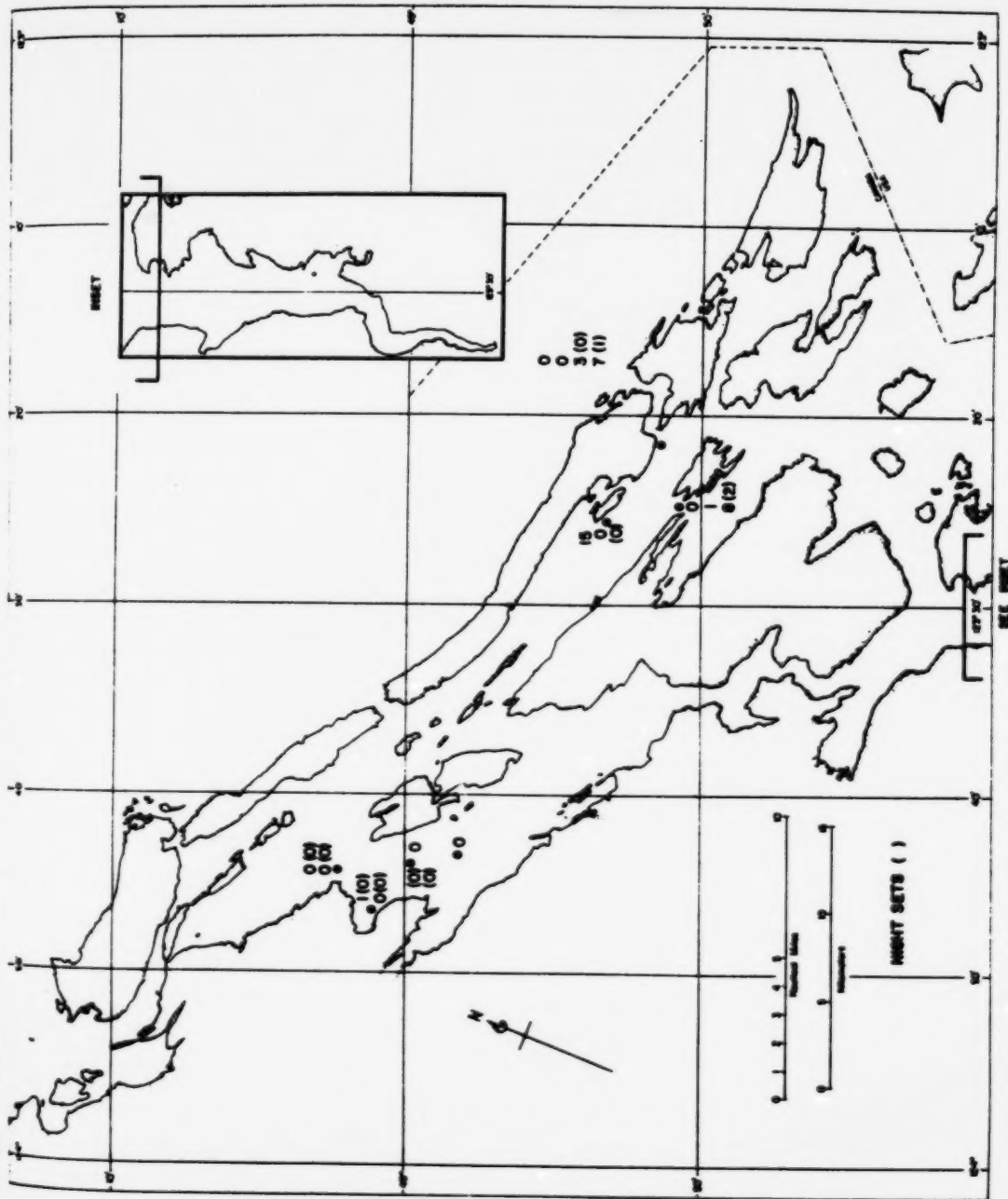


Fig. 19. Sockeye salmon catches July 5-9.

-294-

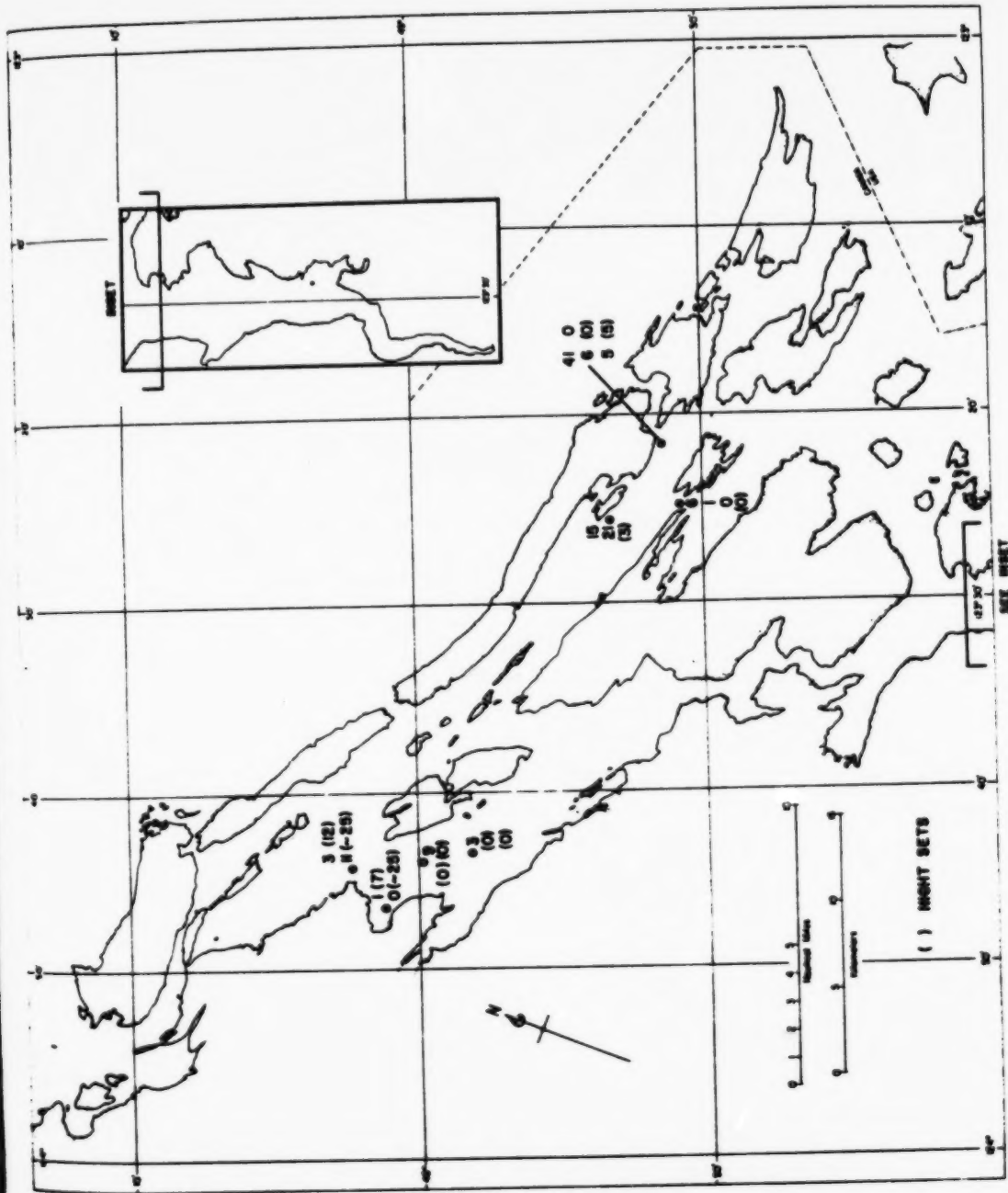


Fig. 20. Pink salmon catches July 5-9.

-296-

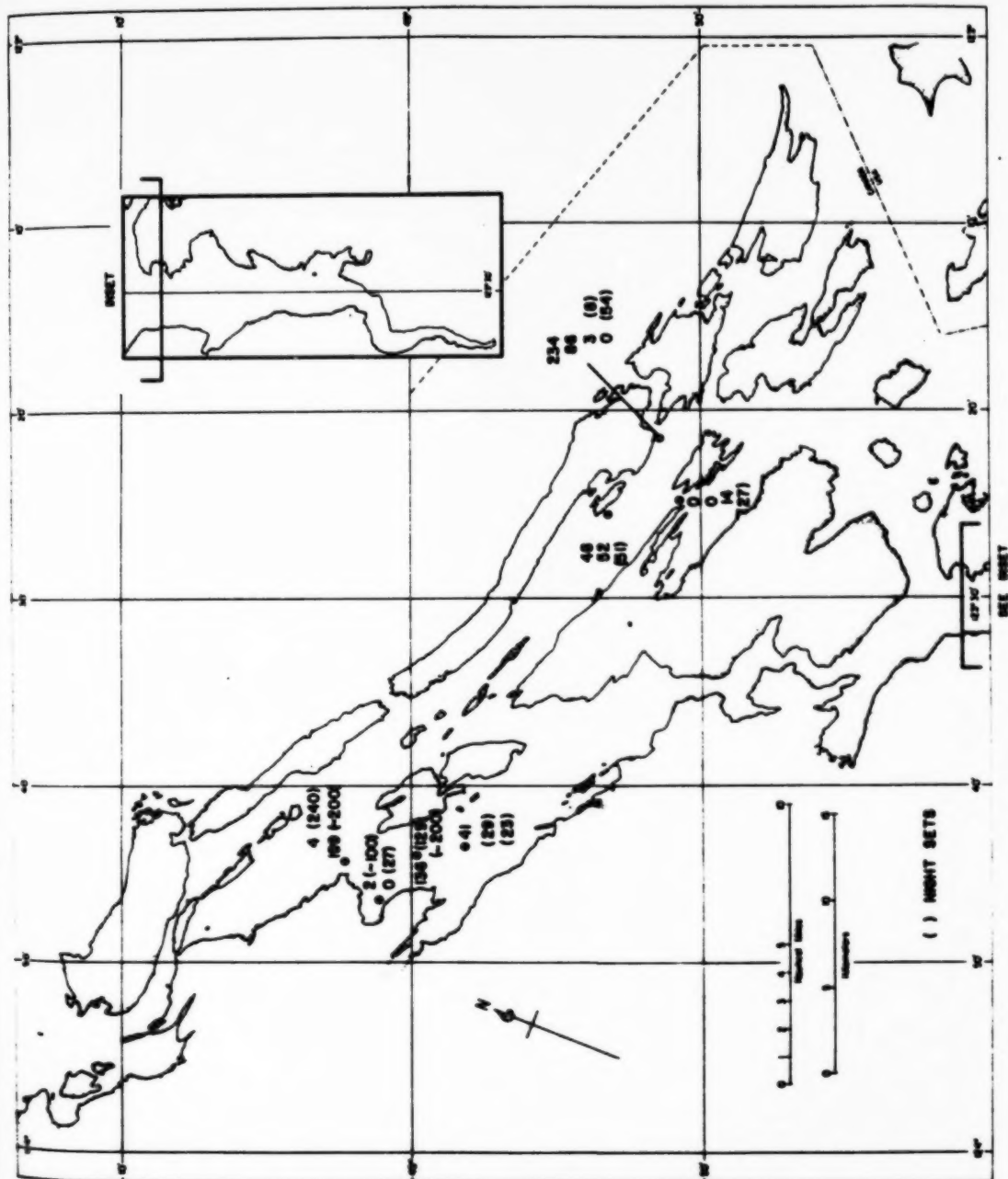


Fig. 21. Chum salmon catches July 5-9.

— 298 —

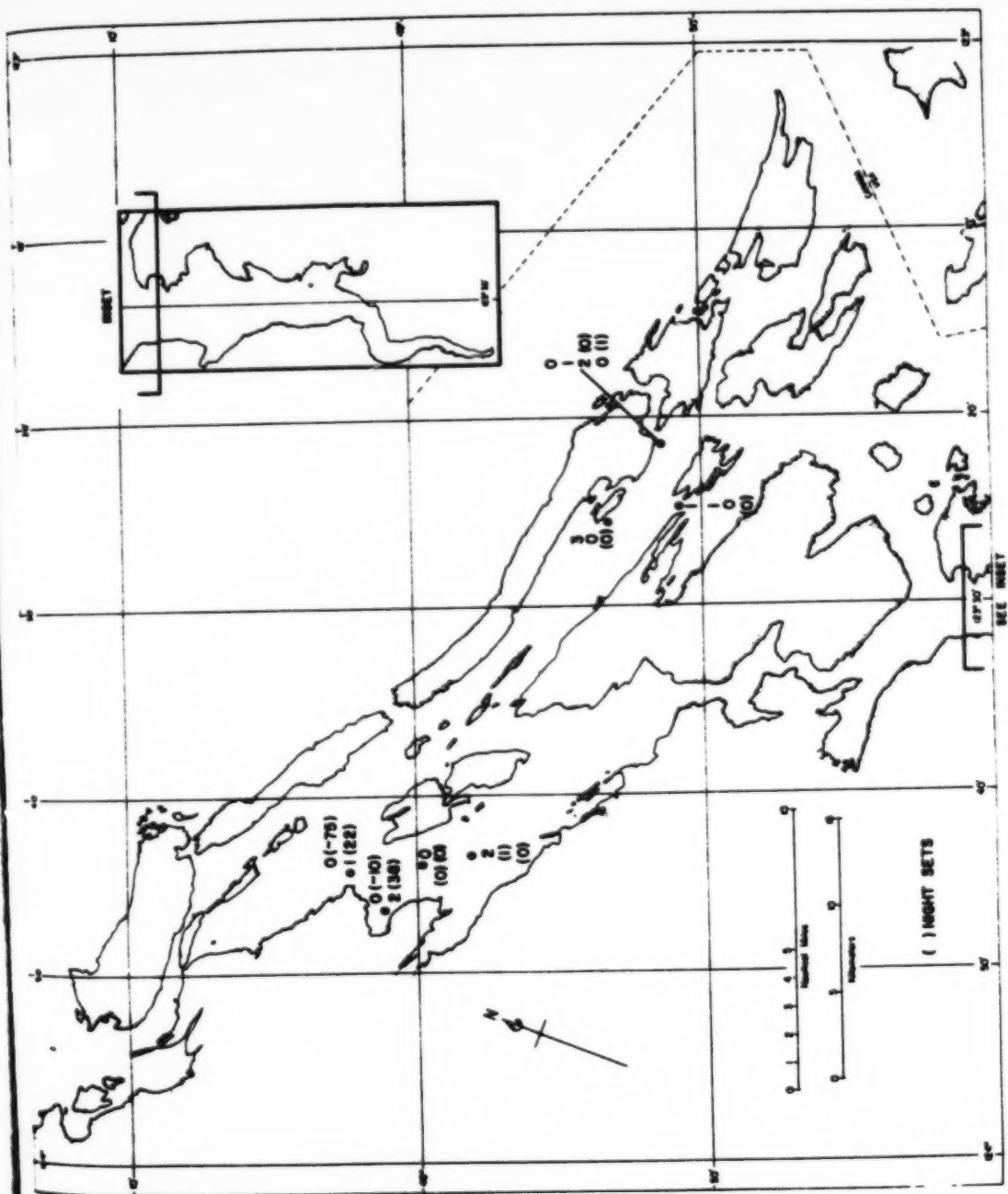
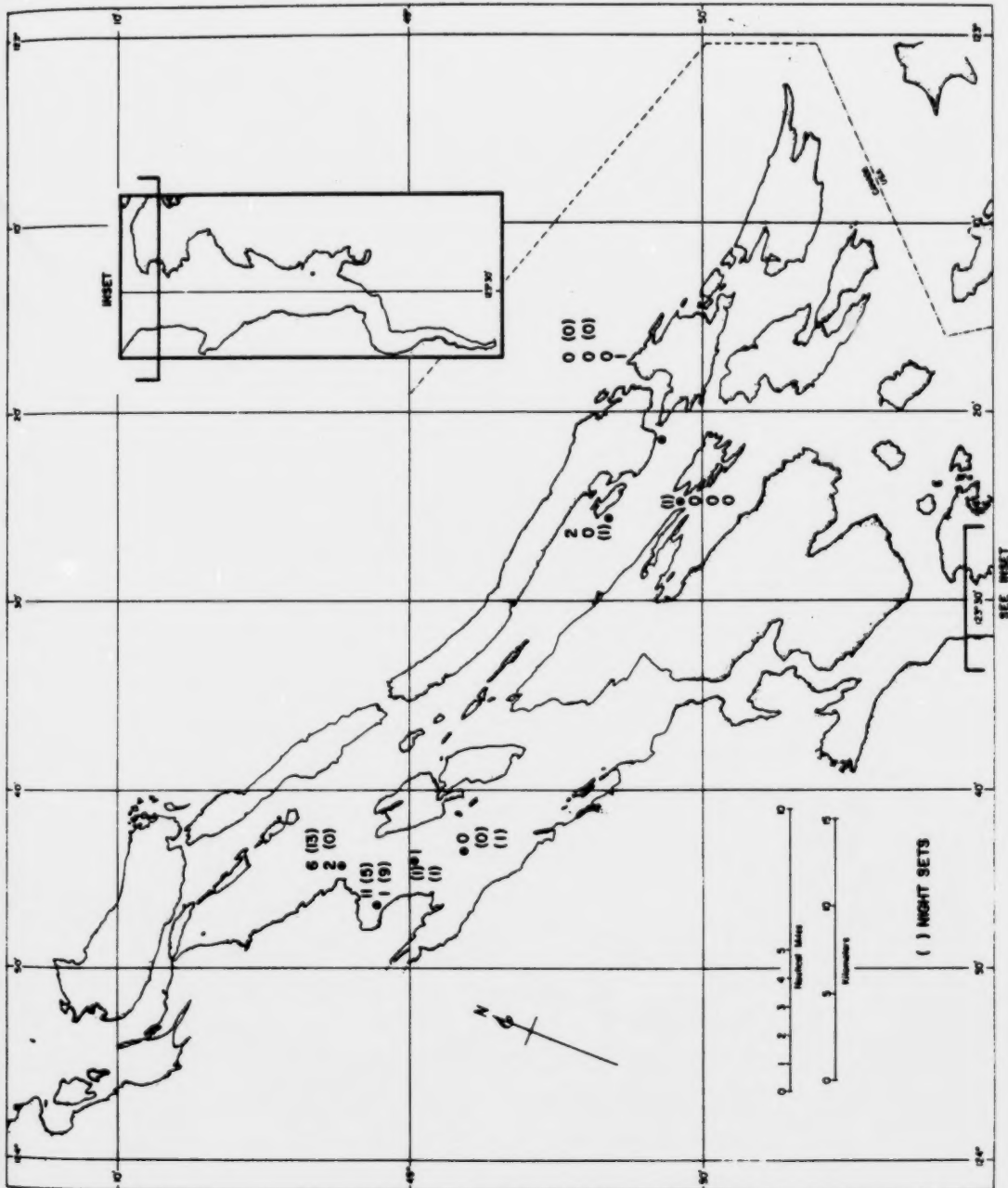


Fig. 22. Coho salmon catches July 5-9.

-300-



-302-

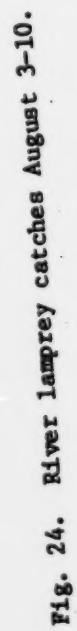


Fig. 24. River lamprey catches August 3-10.

- 304 -

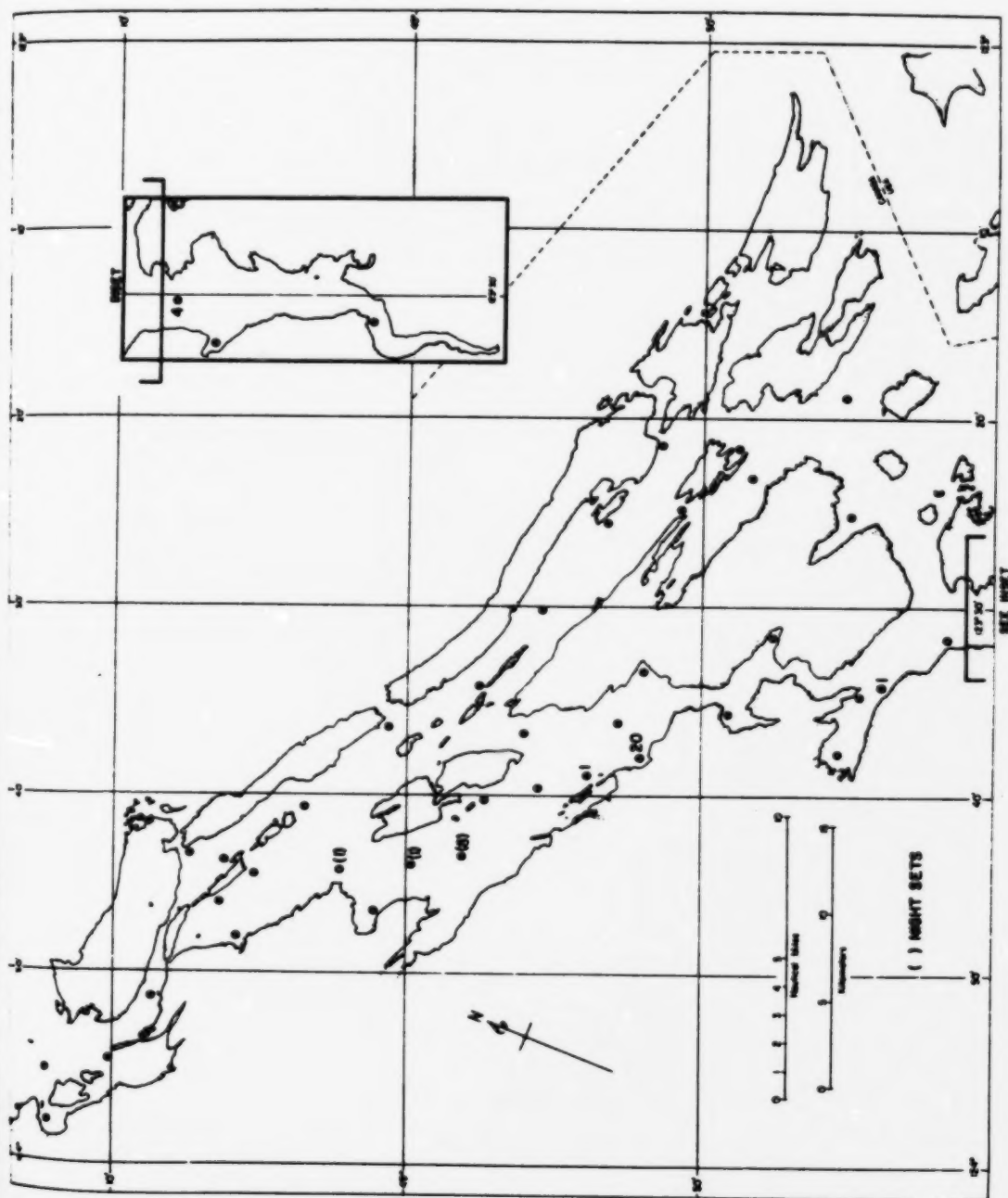


Fig. 25. Dogfish catches August 3-10.

-306-

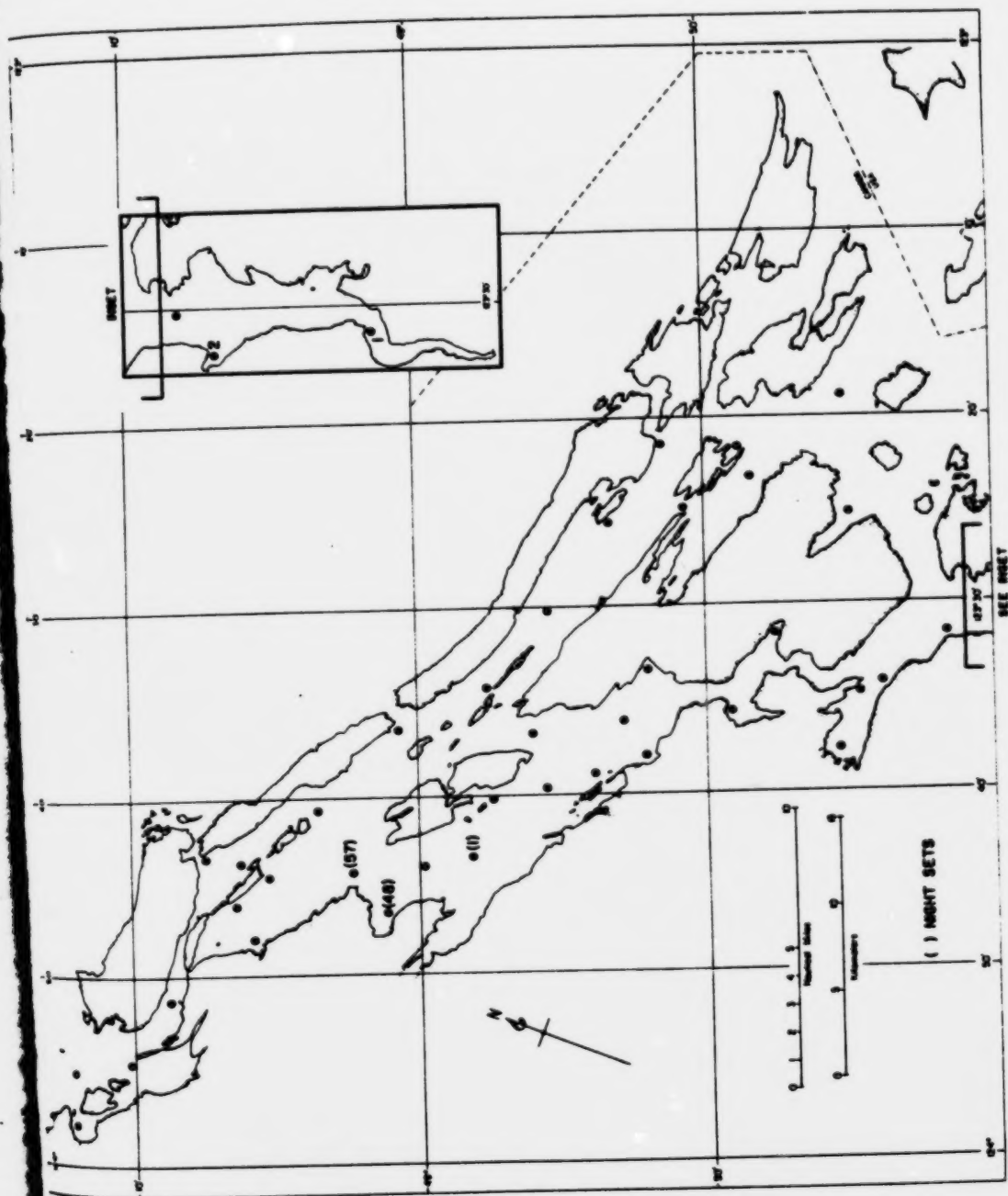


Fig. 26. Pollock catches August 3-10.

- 308 -

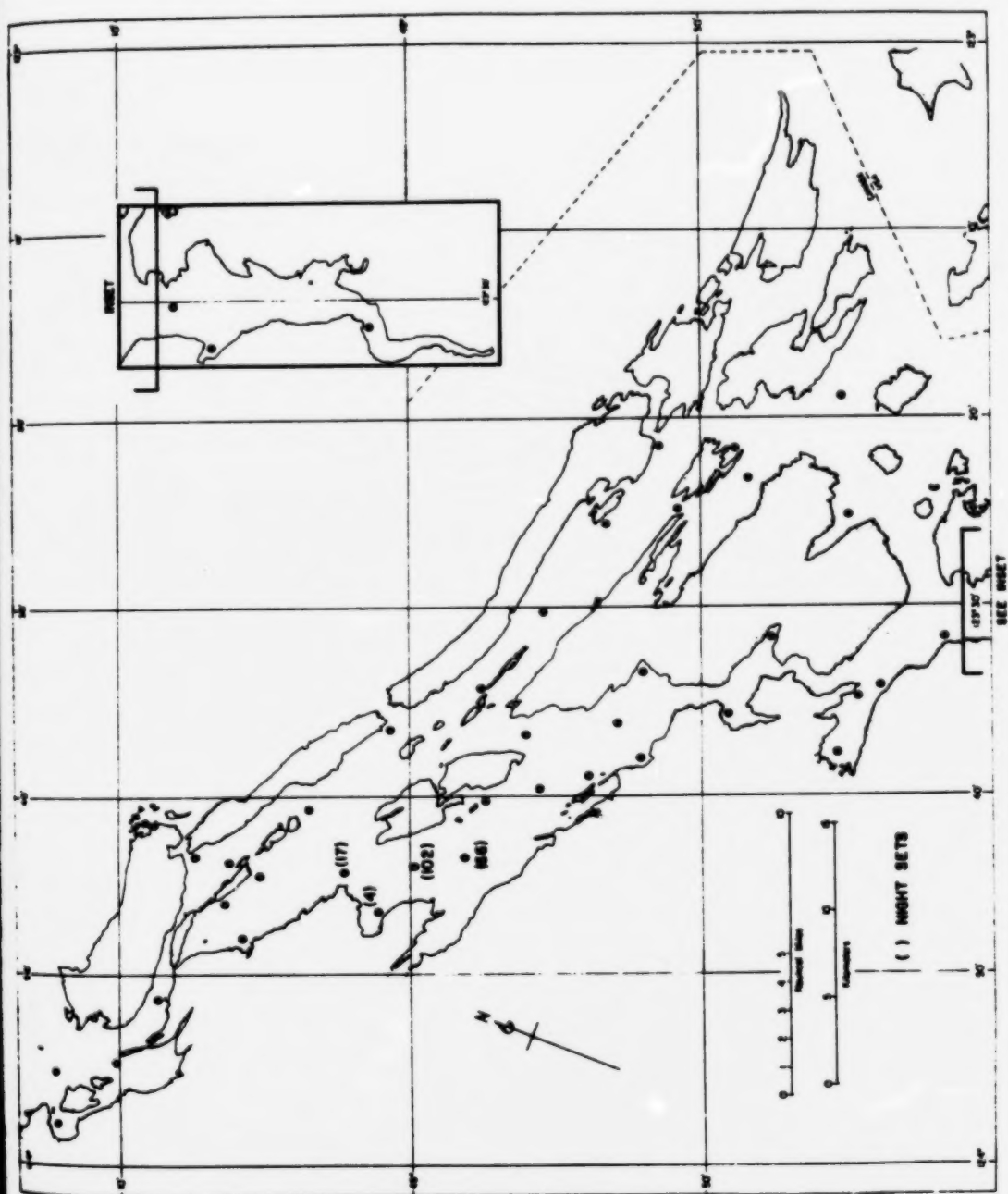


Fig. 27. Pacific hake catches August 3-10.

- 310 -

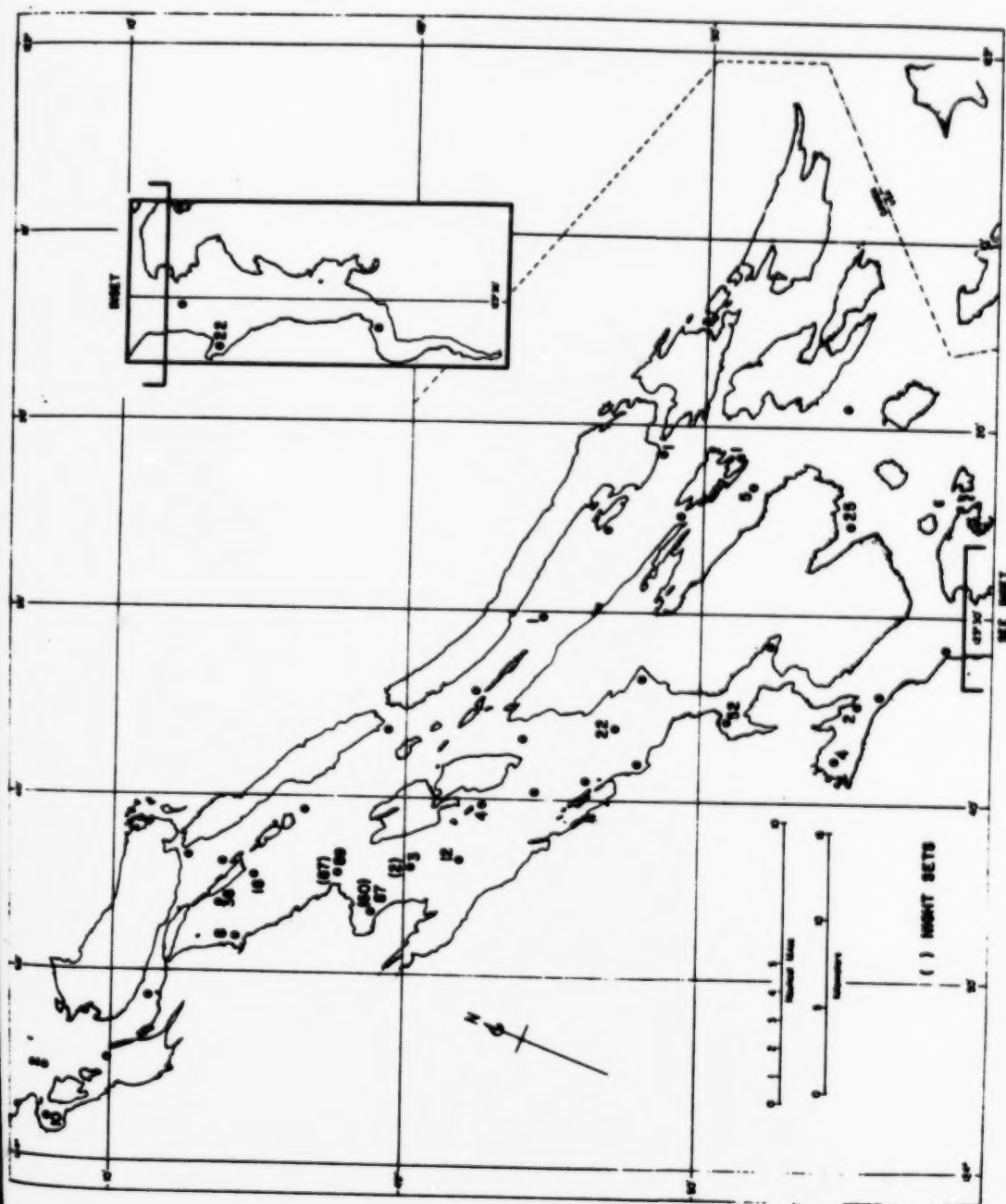


Fig. 26. Pink salmon catches August 3-10.

-312-

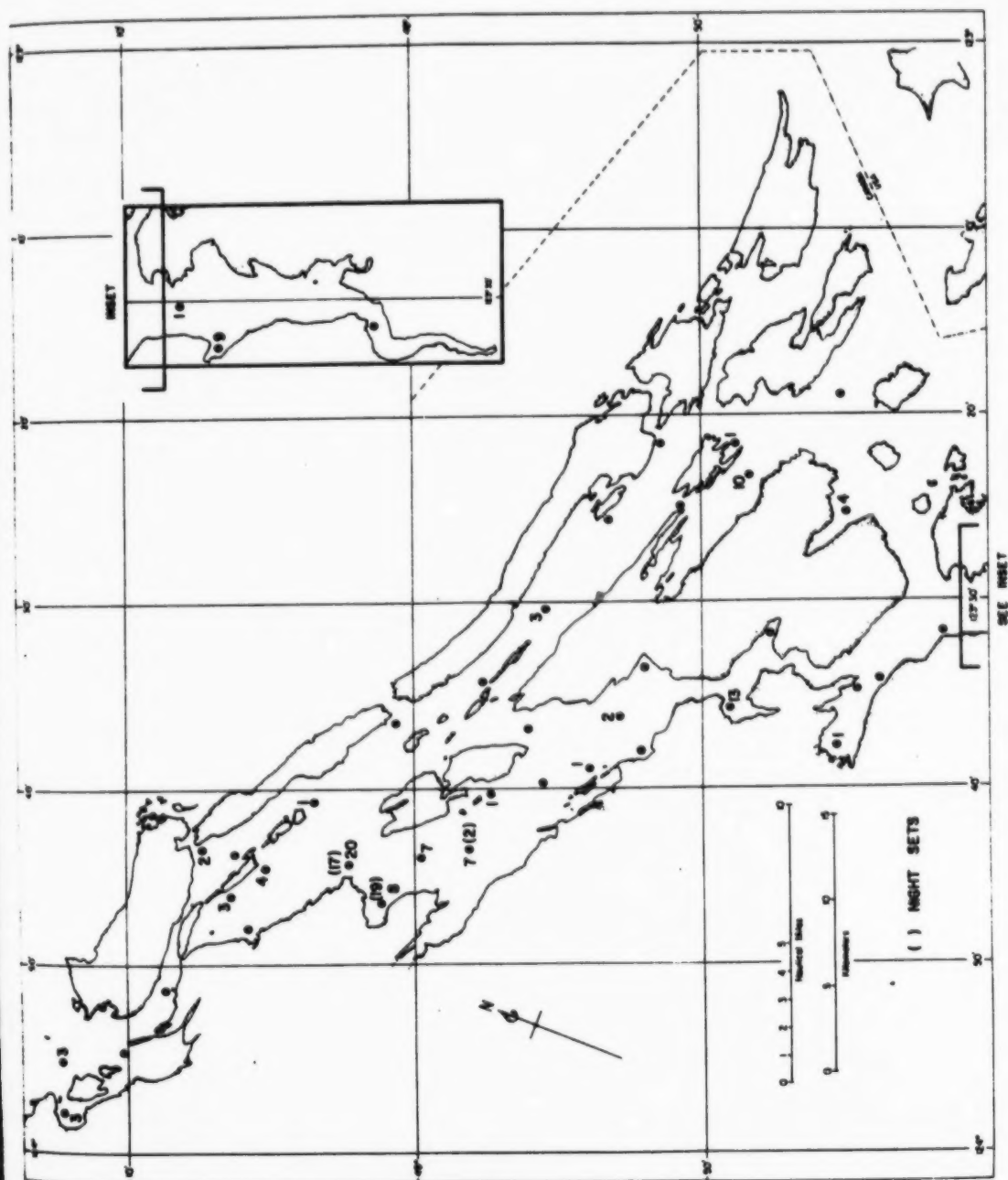


Fig. 29. Chum salmon catches August 3-10.

- 314 -

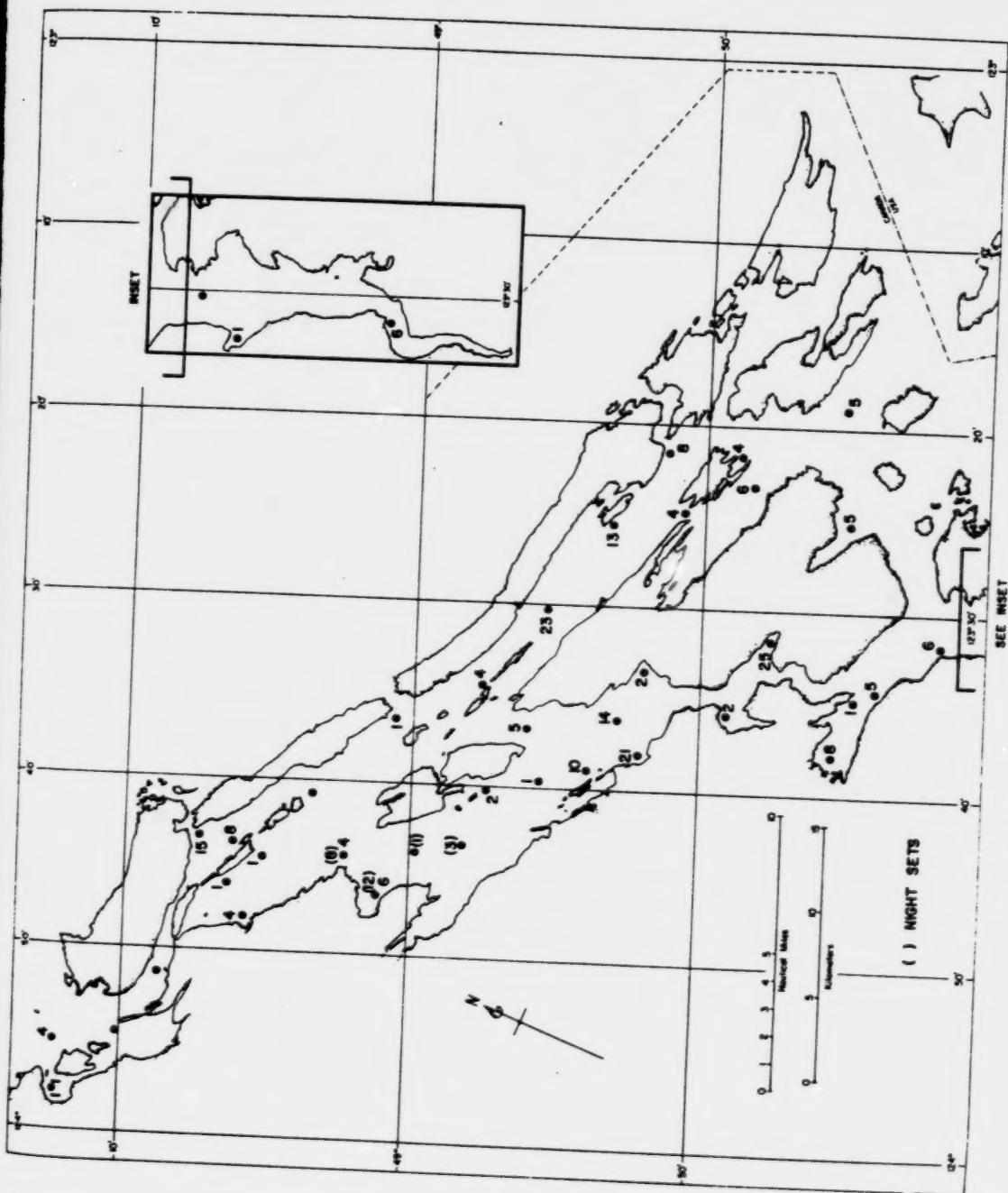


Fig. 30. Coho salmon catches August 3-10.

- 316 -

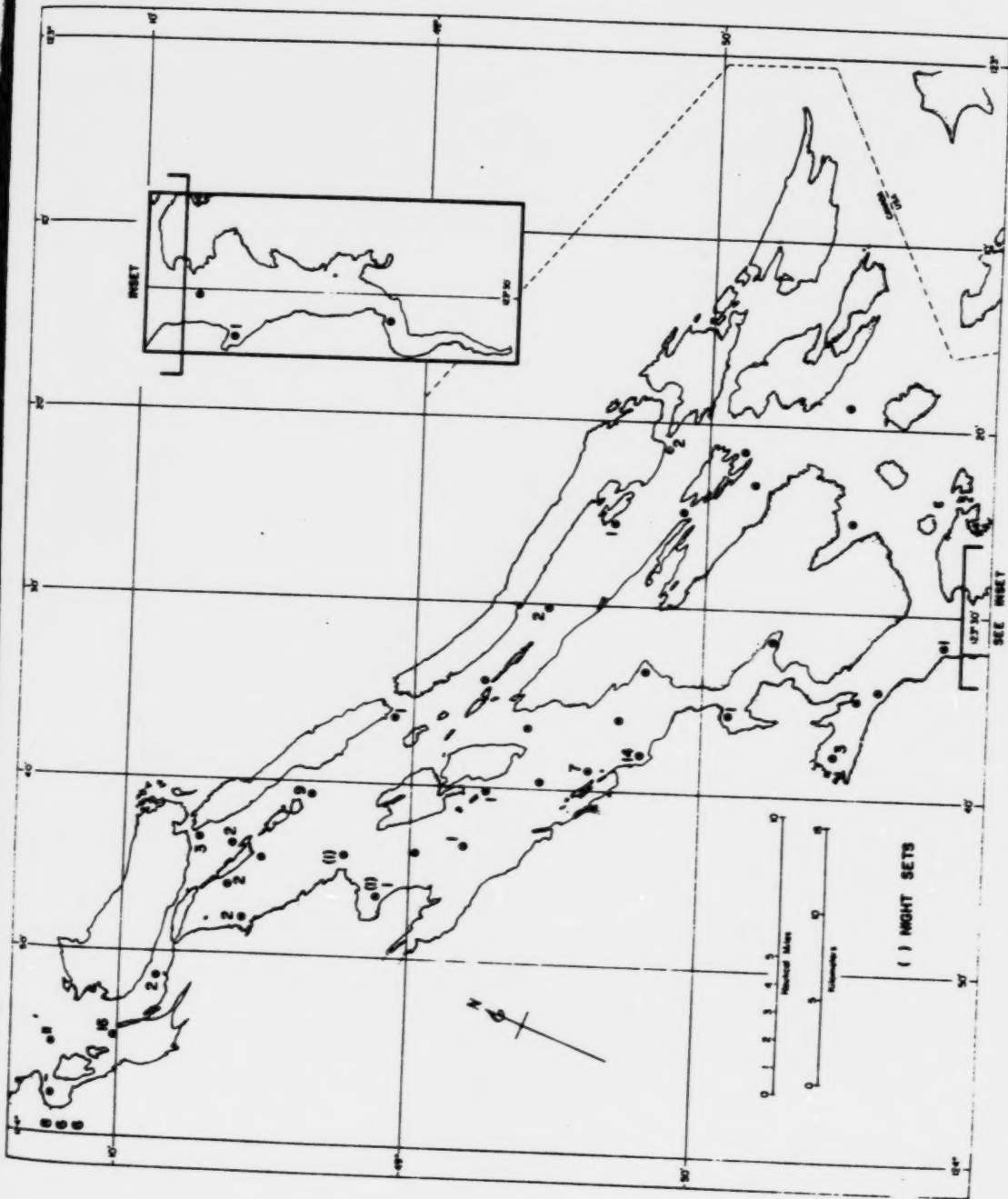


Fig. 31. Chinook salmon catches August 3-10.

- 318 -

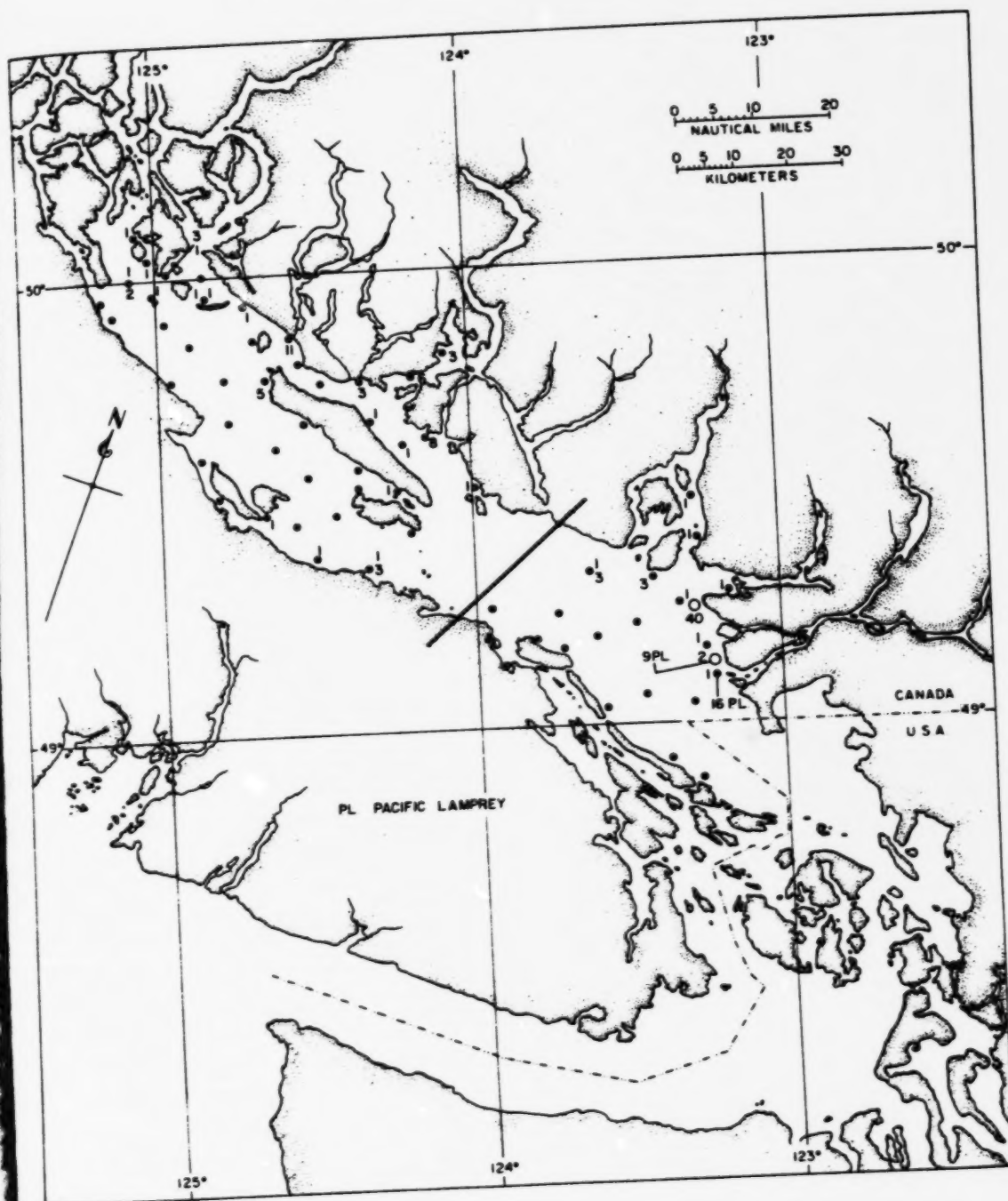


Fig. 32. River lamprey and Pacific lamprey catches in the Strait of Georgia outside of the Gulf Islands August 24-September 2 and September 20-23.

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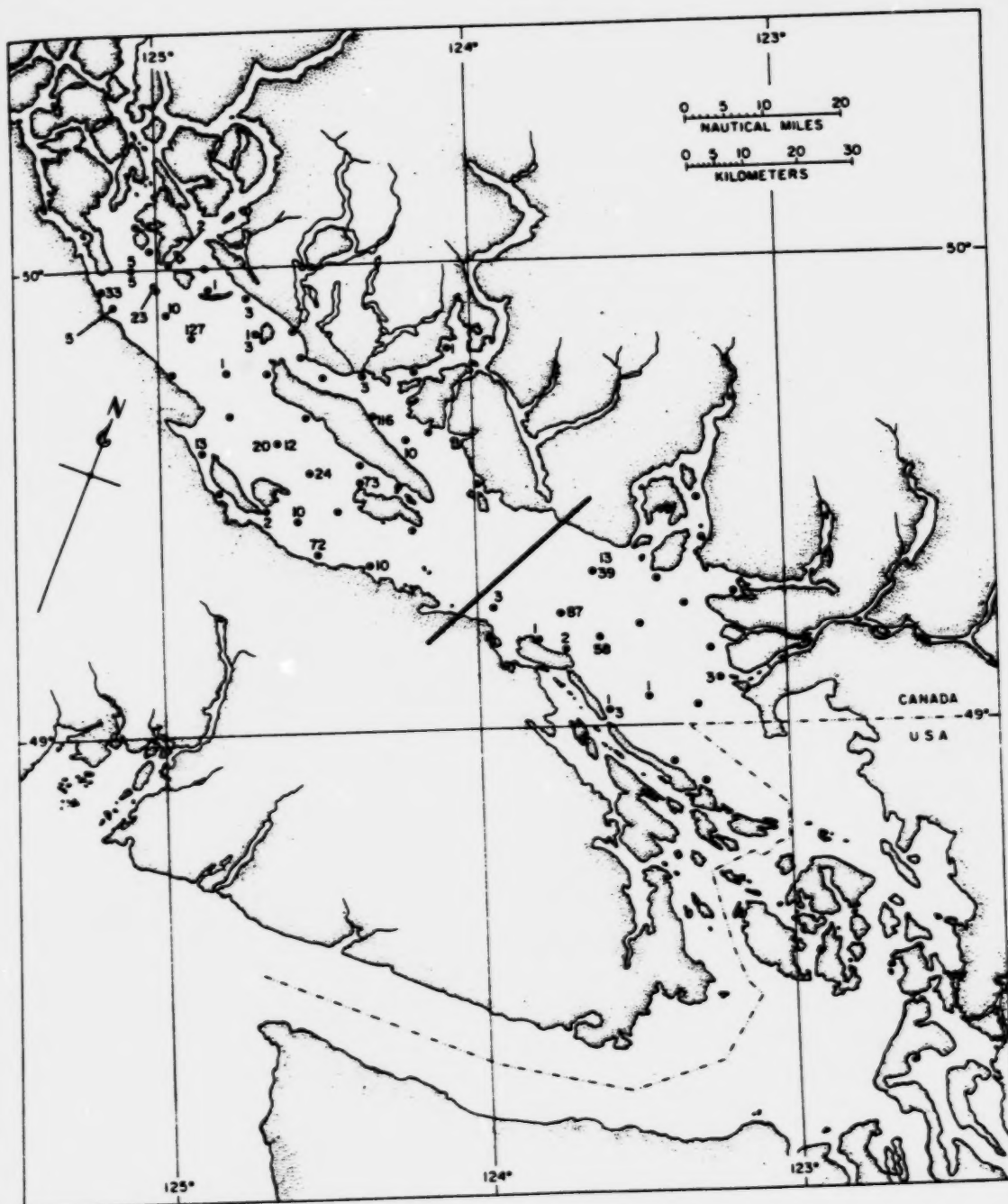


Fig. 33. Dogfish catches in the Strait of Georgia outside of the Gulf Islands, August 24-September 2, September 20-23.

- 322 -

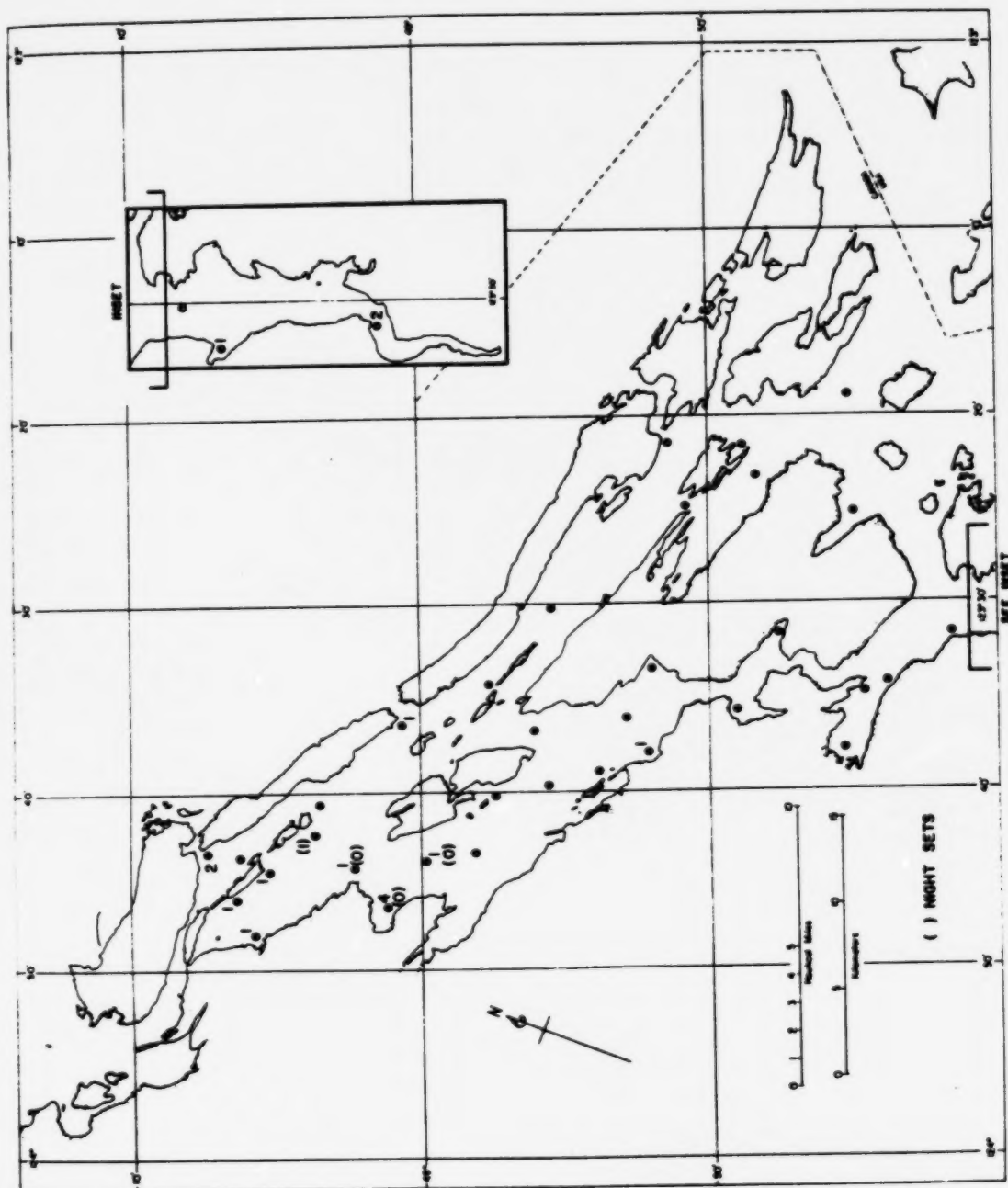


Fig. 34. River lamprey catches September 8-17.

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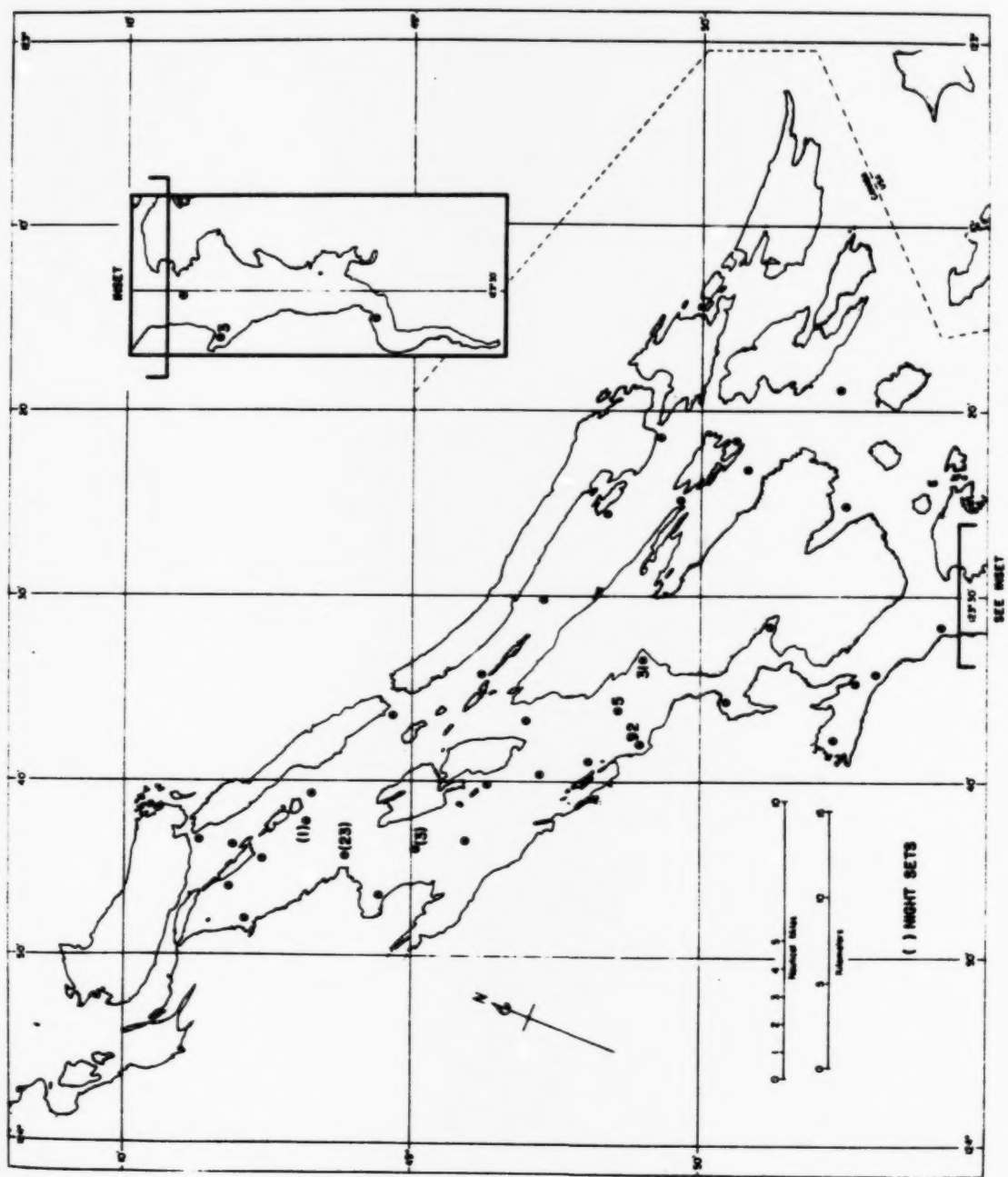


Fig. 35. Dogfish catches September 8-17.

- 326 -

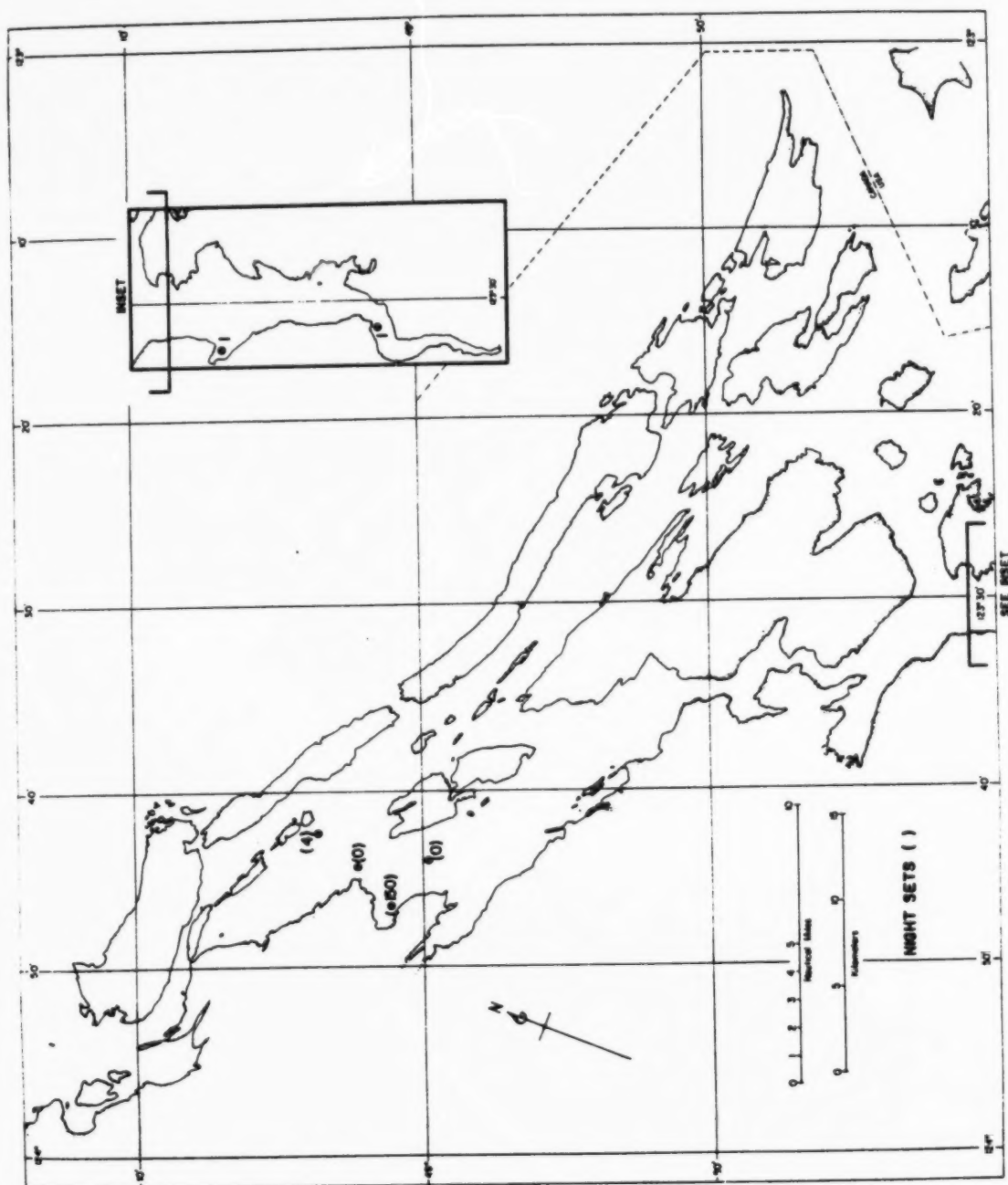


Fig. 36. Pollock catches September 8-17.

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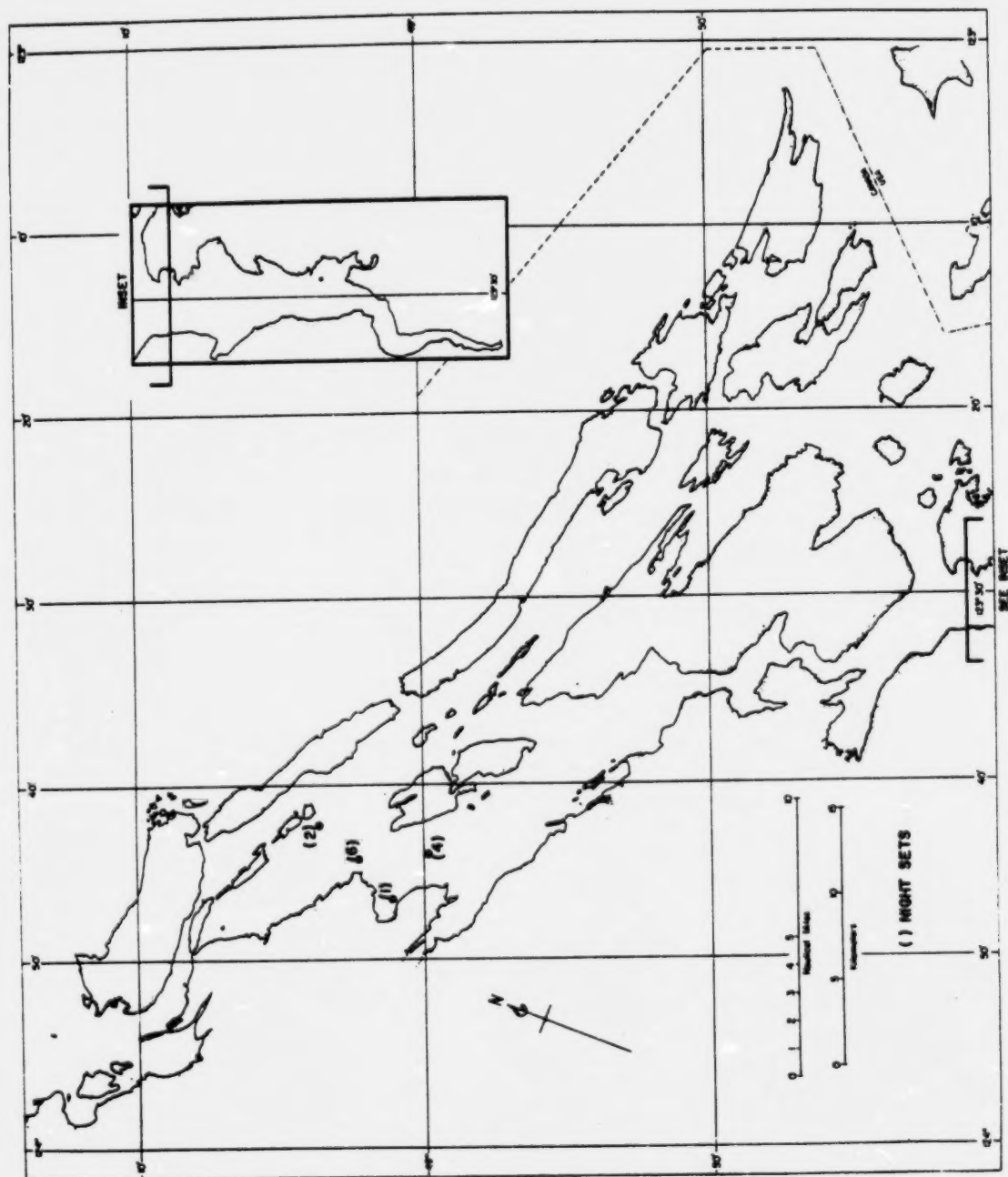


Fig. 37. Pacific hake catches September 8-17.

- 330 -

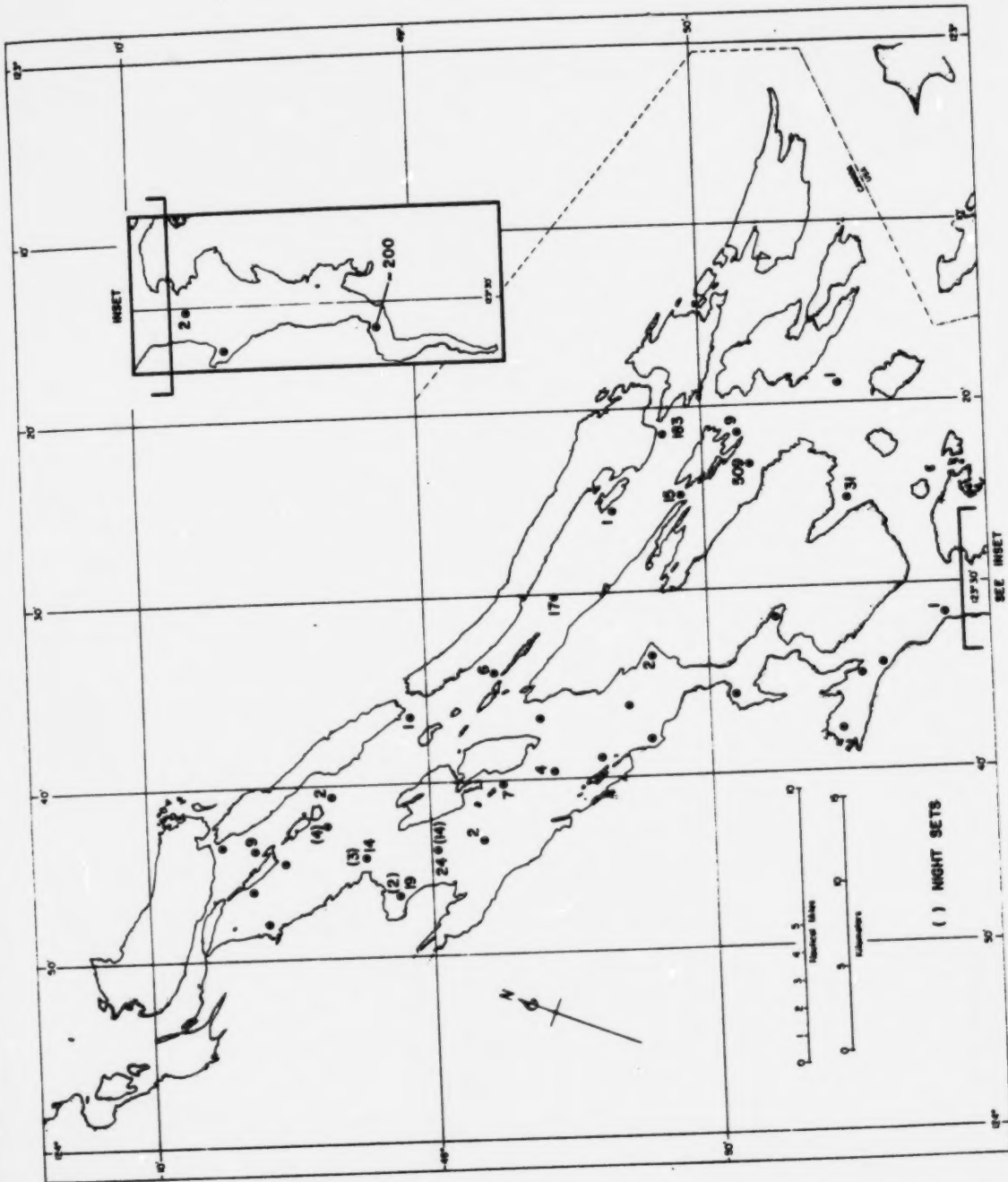


Fig. 38. Pink salmon catches September 8-17.

- 332 -

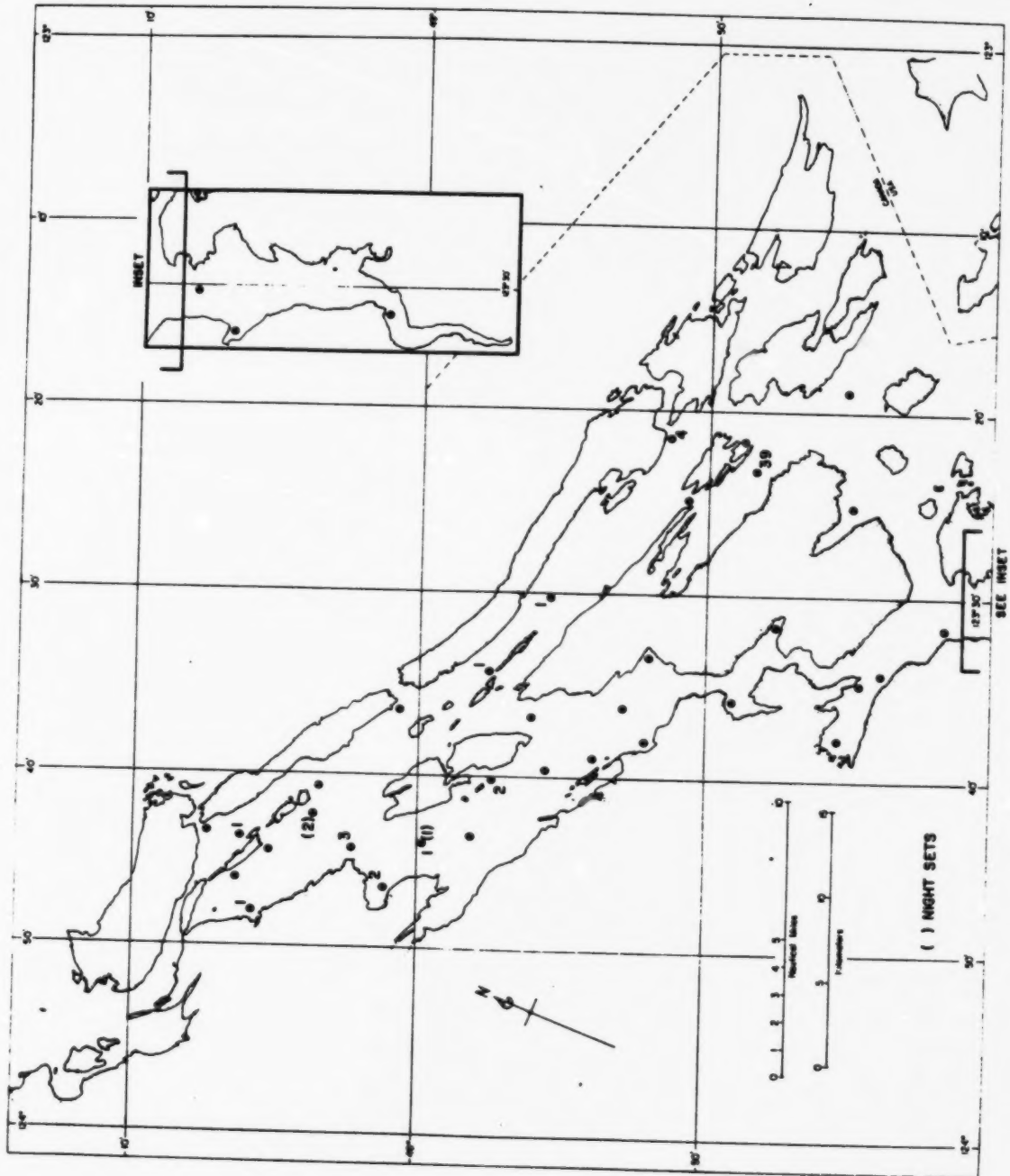


Fig. 39. Chum salmon catches September 8-17.

-334

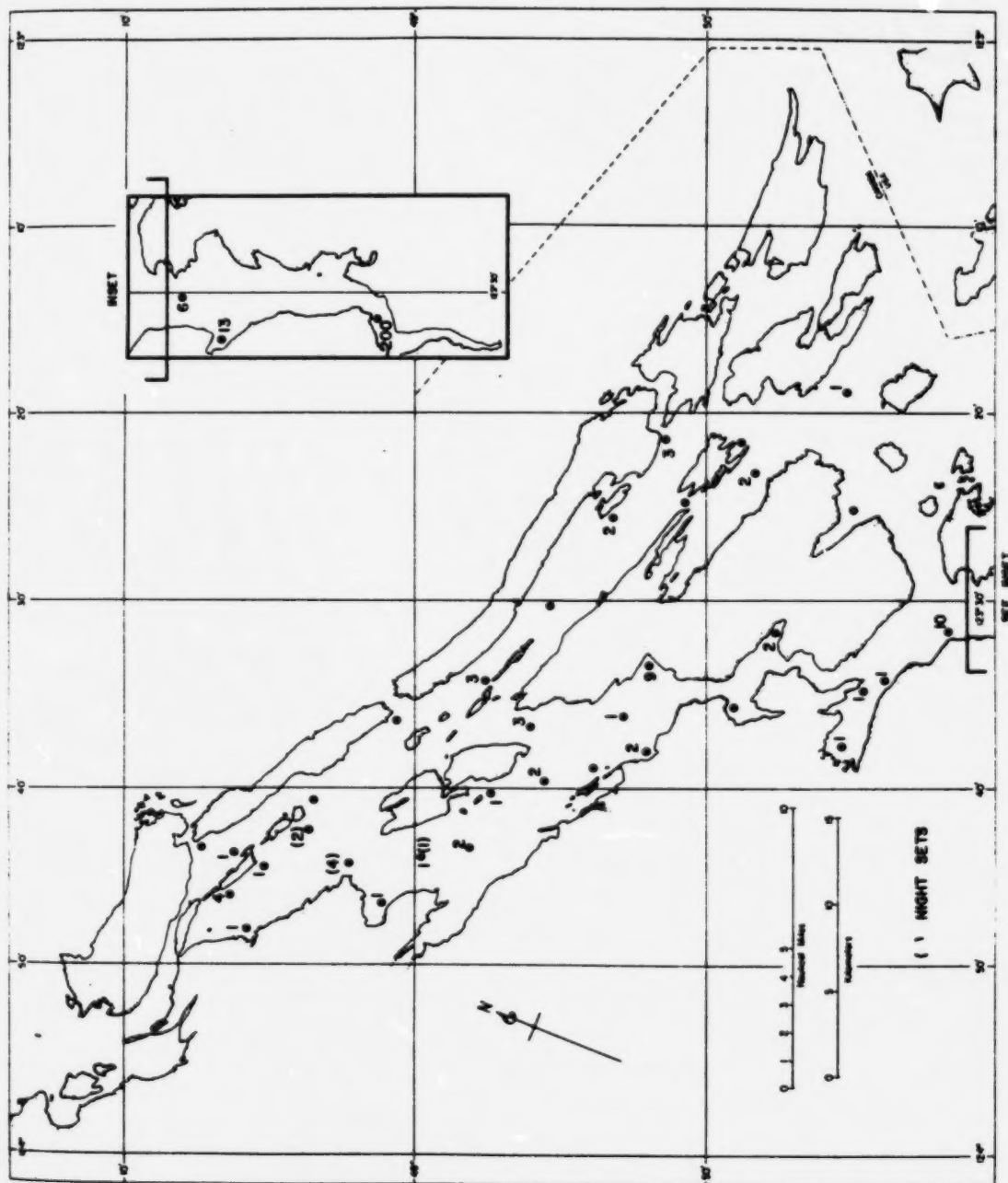


Fig. 40. Coho salmon catches September 8-17.

-336-

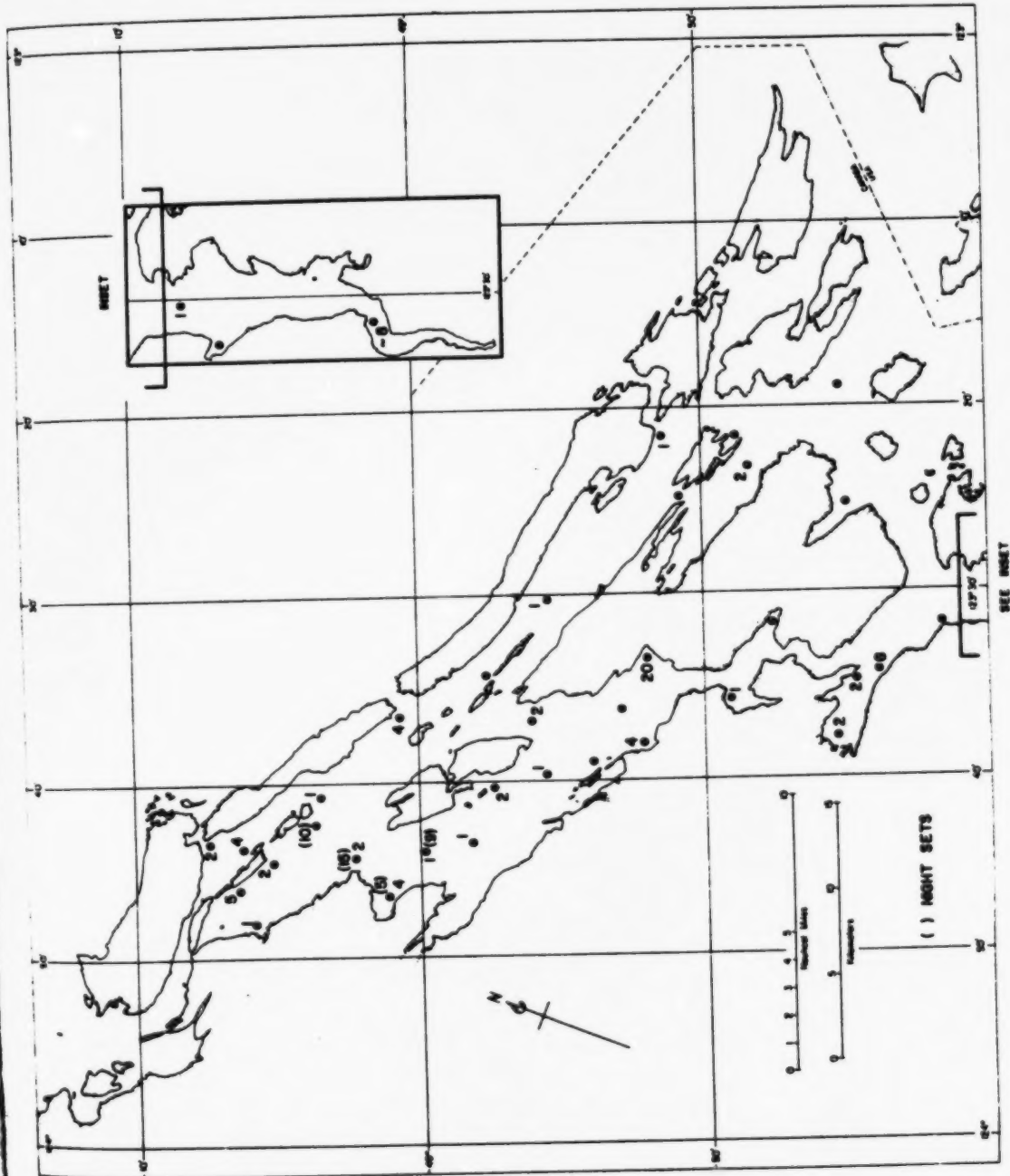


Fig. 41. Chinook salmon catches September 8-17.

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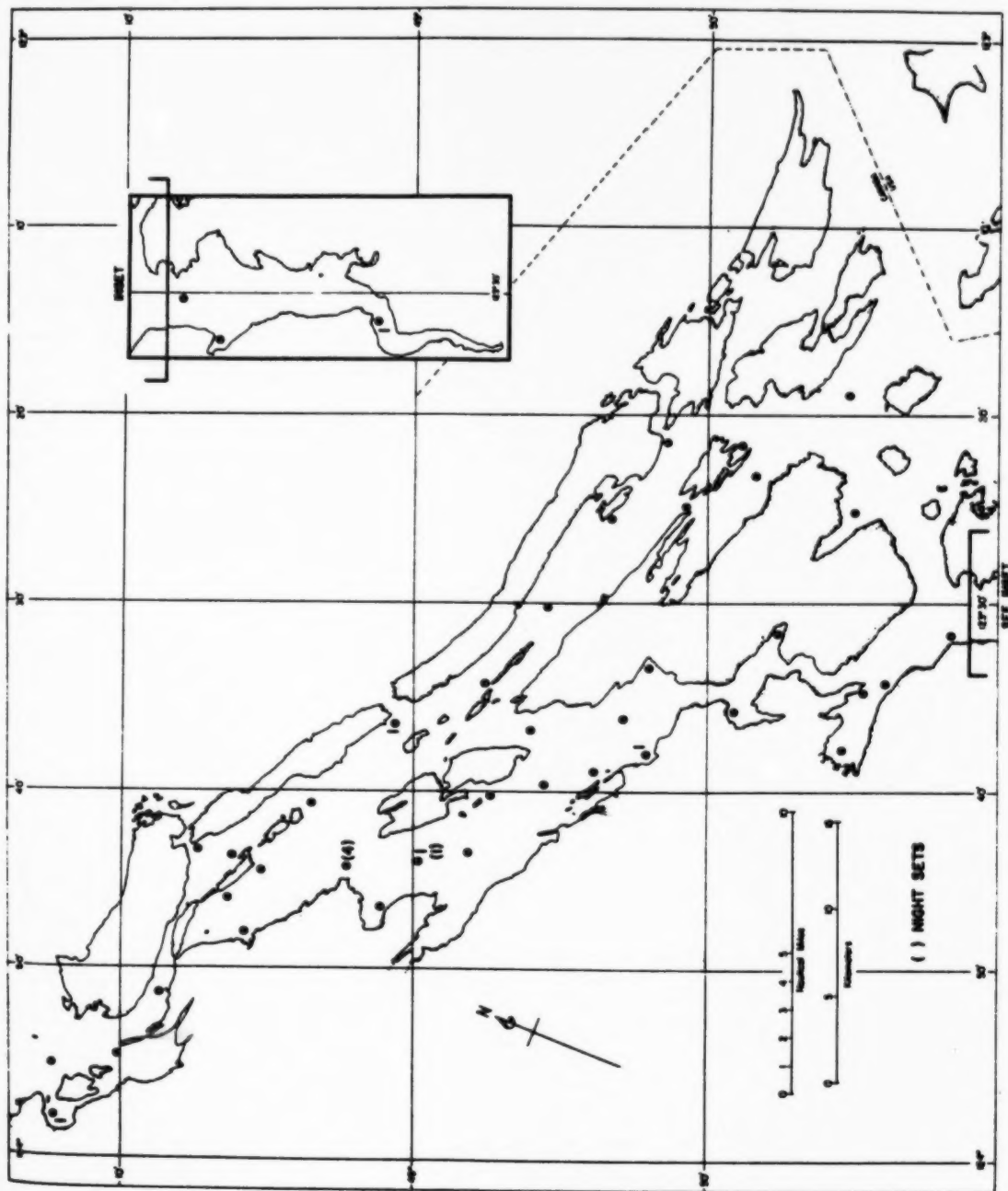


Fig. 42. Dogfish catches October 14-25

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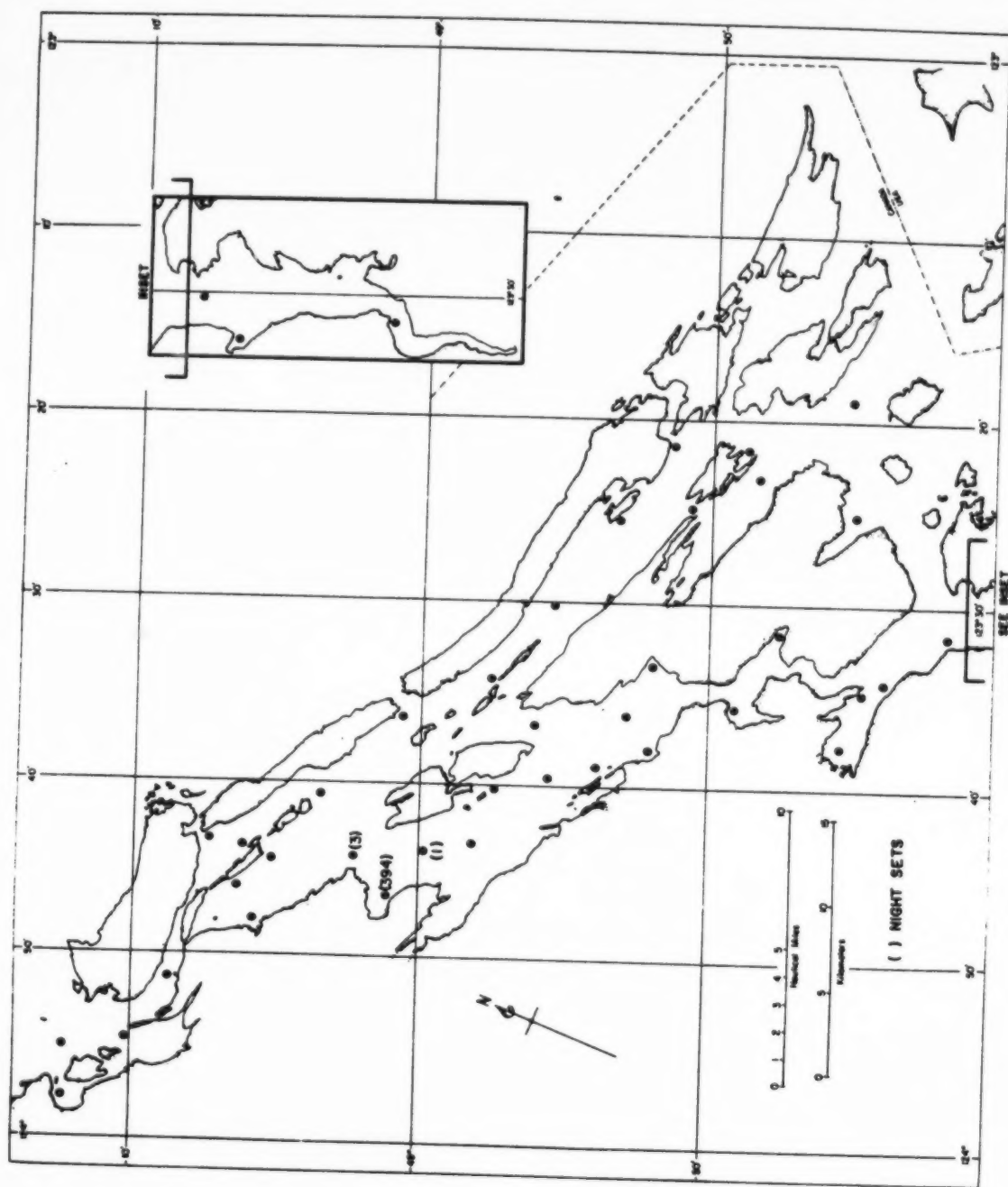


Fig. 43. Pollock catches October 14-25.

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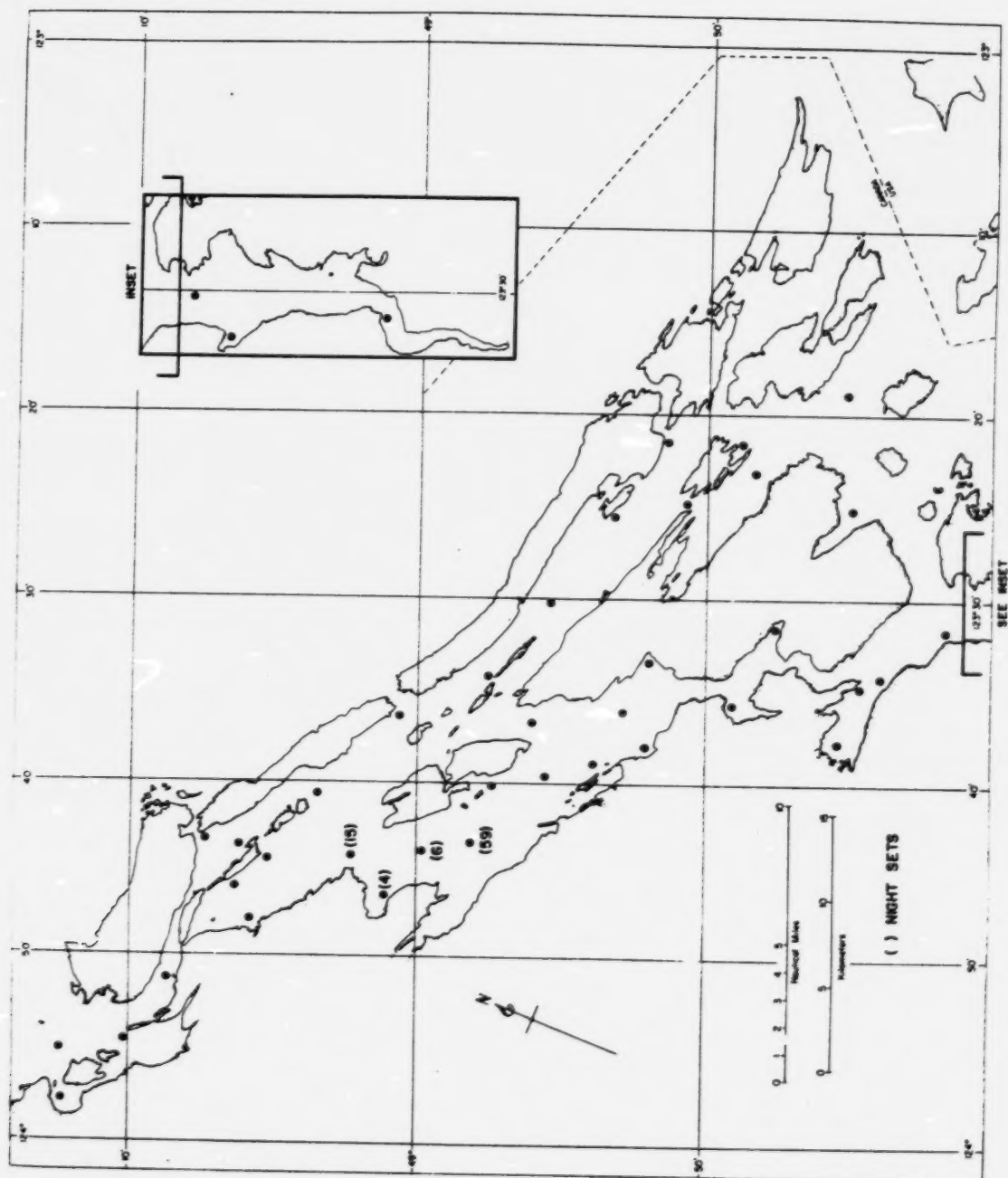


Fig. 44. Pacific hake catches October 14-25.

-344-

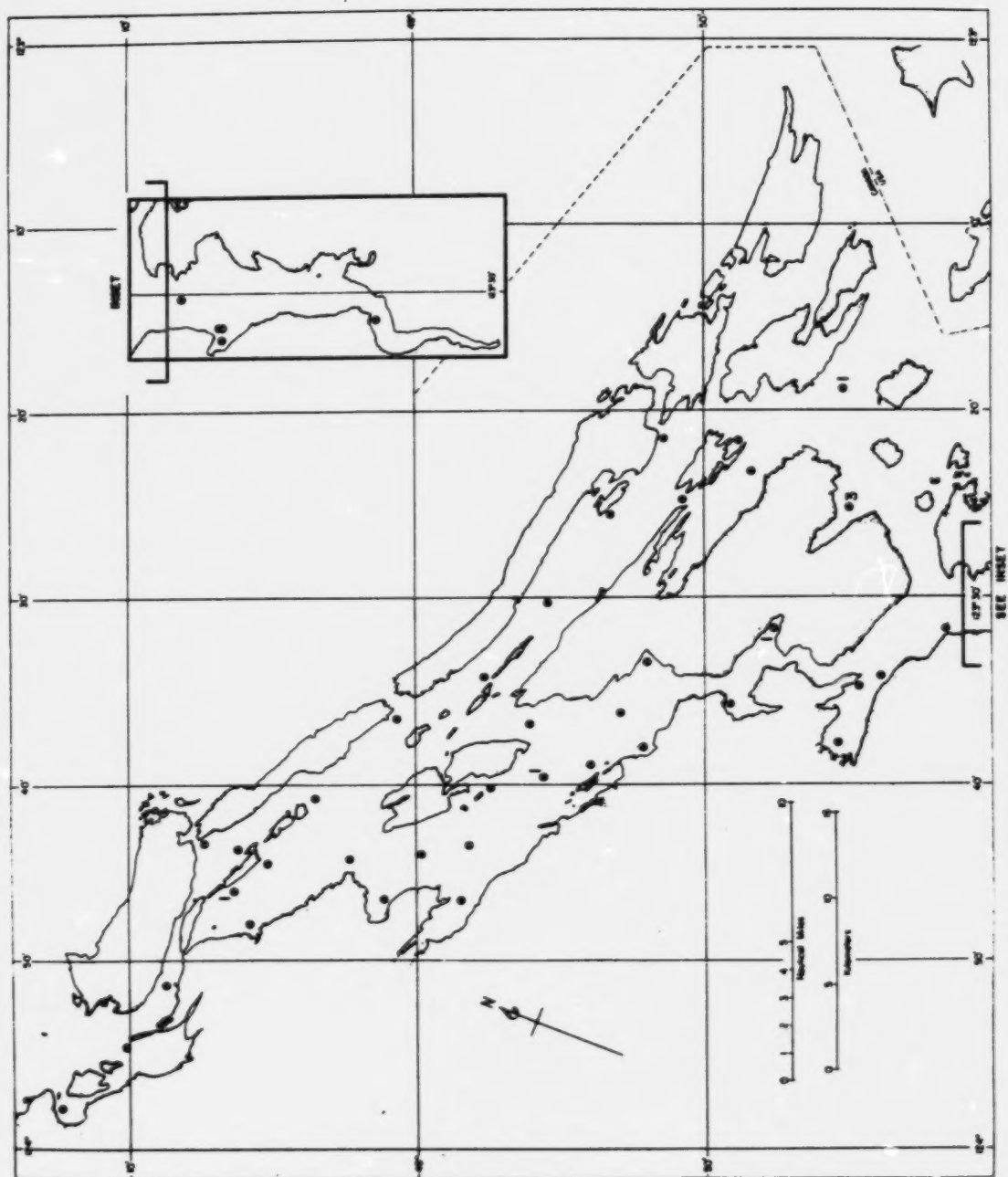


Fig. 45. Pink salmon catches October 14-25.

-346-

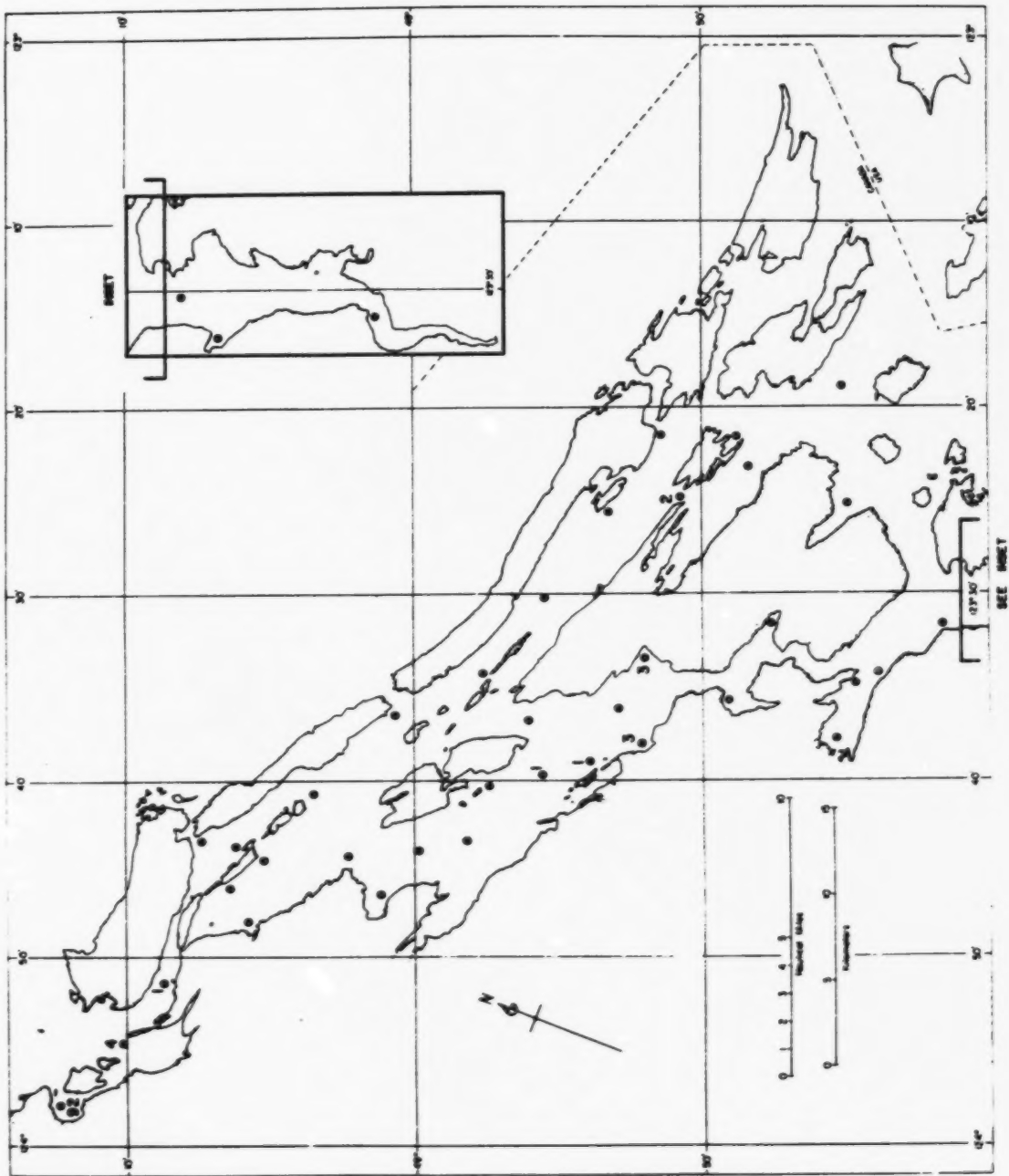


Fig. 46. Chum salmon catches October 14-25.

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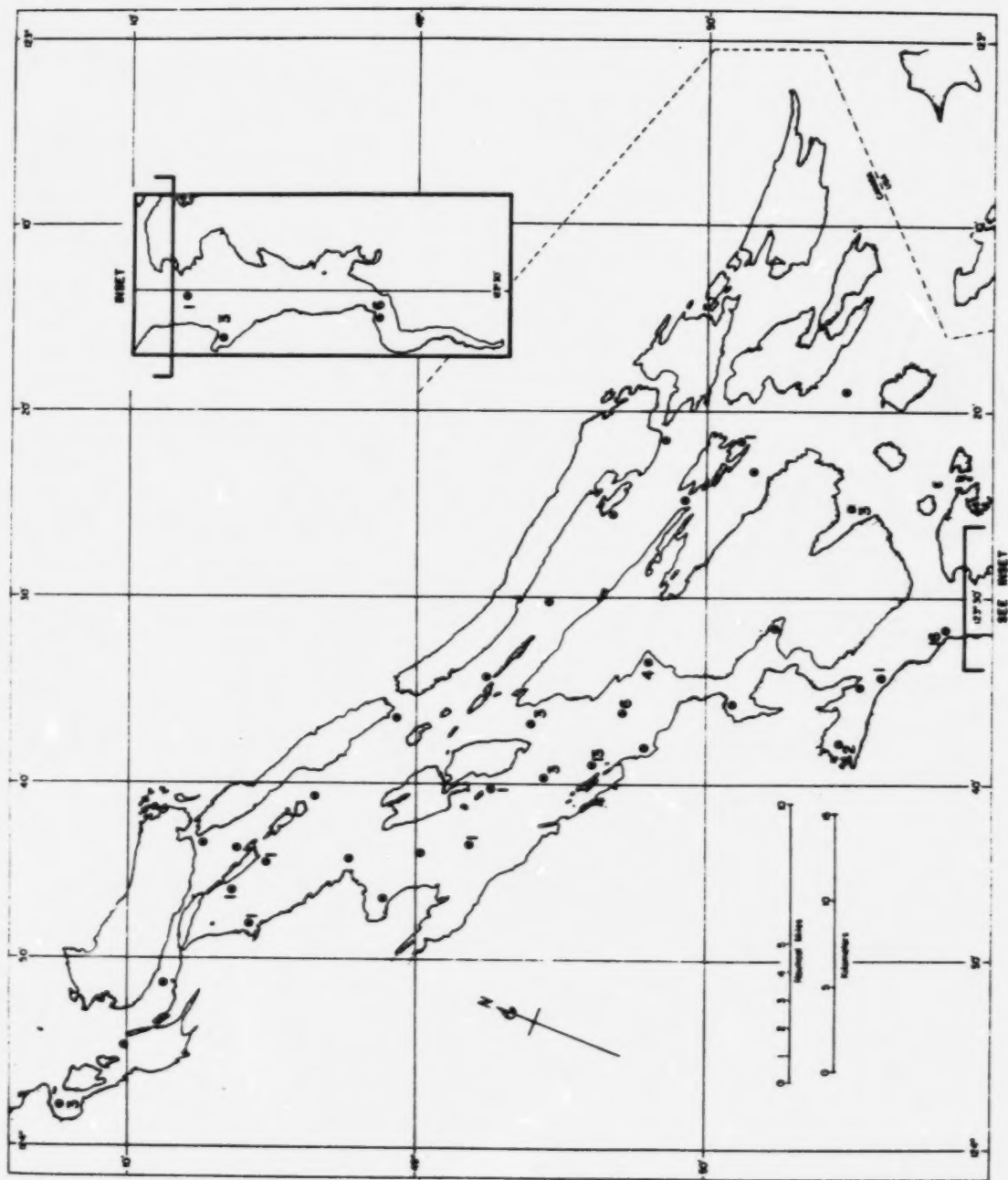


Fig. 47. Coho salmon catches October 14-25.

-350-

1

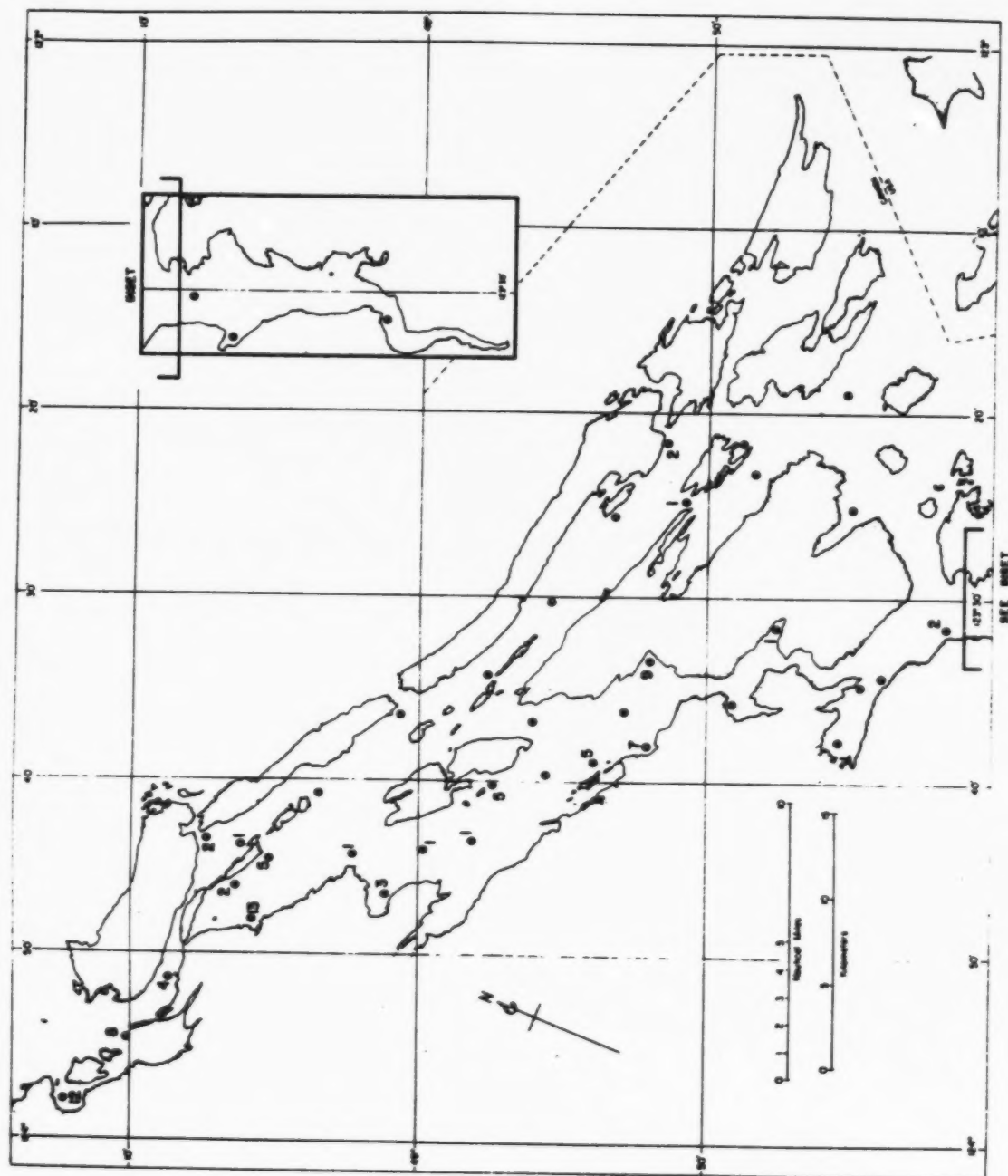


Fig. 48. Chinook salmon catches October 14-25.

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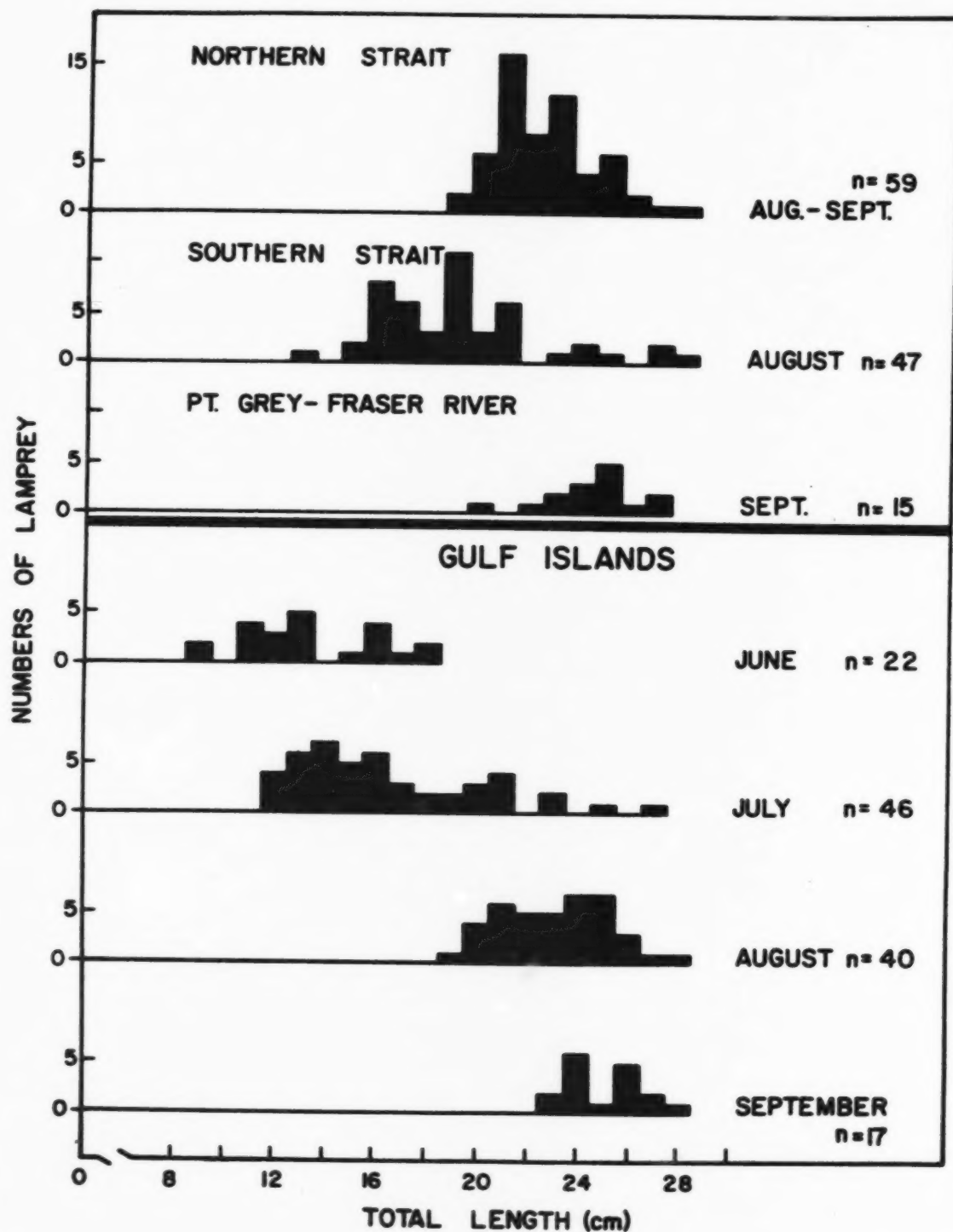


Fig. 49. Length frequency of all river lamprey caught during the study.

POOR

QUALITY

ORIGINAL